Rocky Flats Environmental Technology Site

TYPE 2
RECONNAISSANCE LEVEL CHARACTERIZATION REPORT (RLCR)
AND
PRE-DEMOLITION SURVEY REPORT (PDSR)

BUILDINGS 566 AND 566A CLOSURE PROJECT

VERSION 0

December 3, 2003

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VERSION 0

December 3, 2003

Reviewed by: _____ Date 12/2/03
Don Risoli, Quality Assurance

Reviewed by: _____ Date 12/2/03
D P Snyder, RISS ESH&Q Manager

Approved by: _____ Date 12/2/03
Mike Auble, Area 4 D&D Project Manager

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ATTACHMENTS

ABBREVIATIONS/ACRONYMS

ACM	Asbestos containing material
Be	Beryllium
CDPHE	Colorado Department of Public Health and the Environment
CERCLA	Comprehensive Emergency Response, Compensation and Liability Act
$DCGL_{EMC}$	Derived Concentration Guideline Level – elevated measurement comparison
$DCGL_W$	Derived Concentration Guideline Level – Wilcoxon Rank Sum Test
D&D	Decontamination and Decommissioning
DDCP	Decontamination and Decommissioning Characterization Protocol
DOE	U S Department of Energy
DPP	Decommissioning Program Plan
DQA	Data quality assessment
DQOs	Data quality objectives
EPA	U S Environmental Protection Agency
FDPM	Facility Disposition Program Manual
HVAC	Heating, ventilation, air conditioning
HSAR	Historical Site Assessment Report
IHSS	Individual Hazardous Substance Site
IWCP	Integrated Work Control Package
K-H	Kaiser-Hill
LBP	Lead-based paint
LLW	Low-level waste
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
NORM	Naturally occurring radioactive material
NRA	Non-Rad-Added Verification
OSHA	Occupational Safety and Health Administration
PARCC	Precision, accuracy, representativeness, comparability and completeness
PCBs	Polychlorinated Biphenyls
PDS	Pre-demolition survey
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RFFO	Rocky Flats Field Office
RLC	Reconnaissance Level Characterization
RLCR	Reconnaissance Level Characterization Report
RSP	Radiological Safety Practices
SVOCs	Semi-volatile organic compounds
TCLP	Toxicity Characteristic Leaching Procedure
TSA	Total surface activity
VOCs	Volatile organic compounds

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EXECUTIVE SUMMARY

A Reconnaissance Level Characterization (RLC) was performed to enable facility "Typing" per the DPP (10/8/98) and compliant disposition and waste management of Buildings 566 and 566A Initially, these facilities were anticipated Type 1 facilities resulting in the characterization being performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP) requirements During this anticipated Type 1 facility characterization, plutonium contamination was identified in the ventilation system and in the concrete slab trench, therefore, these facilities have been re-typed as Type 2 RFCA facilities This characterization report satisfies both the Type 2 facility Reconnaissance Level Characterization Report (RLCR) and Pre-Demolition Survey Report (PDSR) requirements All facility surfaces were characterized in this combination RLC/PDS, including the interior and exterior surfaces (i e , floor, walls, ceiling, roof and equipment) Environmental media beneath and surrounding the facility was not within the scope of this RLCR and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA

The RLC encompassed both radiological and chemical characterization to enable compliant disposition and waste management pursuant to the D&D Characterization Protocol (MAN-077-DDCP) The characterization built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report

Final PDS results indicate that radiological contamination exists in excess of the PDSP unrestricted release limits of DOE Order 5400 5 in the two concrete slab trenches, the two process waste tanks, and one leg of vertical process waste piping Refer to Figure C-1 in Attachment C for the locations of the contaminated items These contaminated items will be managed and disposed of as LLW during demolition

All beryllium sample results were less than 0 1 $\mu g/100cm^2$ All Bulk samples of building materials suspected of containing asbestos were "None Detected" Based on asbestos sampling results, no asbestos containing materials were identified in the facilities All demolition debris will be managed in compliance with regulations governing PCBs (40 CFR 761), and Environmental Compliance Guidance #27, *Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal,* as applicable

Based upon data presented in this combination RLCR/PDSR, Buildings 566 and 566A are considered Type 2 facilities To ensure these facilities remains free of contamination and RLC data remain valid, isolation controls have been established and the facilities posted accordingly

1 INTRODUCTION

A Reconnaissance Level Characterization (RLC) was performed to enable facility "Typing" per the DPP (10/8/98) and compliant disposition and waste management of Buildings 566 and 566A Initially, these facilities were anticipated Type 1 facilities resulting in the characterization being performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP) requirements During this anticipated Type 1 facility characterization, plutonium contamination was identified in the ventilation system and in the concrete slab trench, therefore, these facilities have been re-typed as Type 2 RFCA facilities This characterization report satisfies both the Type 2 facility Reconnaissance Level Characterization Report (RLCR) and Pre-Demolition Survey Report (PDSR) requirements All facility surfaces were characterized in this combination RLC/PDS, including the interior and exterior surfaces (i e , floor, walls, ceiling, roof and equipment) Environmental media beneath and surrounding the facility was not within the scope of this RLCR and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA

As part of the Rocky Flats Environmental Technology Site (RFETS) Closure Project, numerous facilities will be removed, among these are Buildings 566 and 566A The location of these facilities is shown in Attachment A These facilities no longer support the RFETS mission and require removal to reduce Site infrastructure, risks and/or operating costs

Before these facilities can be removed, a Reconnaissance Level Characterization (RLC) and a Pre-Demolition Survey (PDS) must be conducted, this document presents the RLC/PDS results The RLC/PDS was conducted pursuant to the Decontamination and Decommissioning Characterization Protocol (MAN-077-DDCP) and the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP) The RLC/PDS built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report

1.1 Purpose

The purpose of this report is to communicate and document the results of the RLC/PDS effort A PDS is performed before building demolition to define the pre-demolition radiological and chemical conditions of a facility Pre-demolition conditions are compared with the unrestricted release limits for radiological and non-radiological contaminants PDS results will enable project personnel to make final disposition decisions, develop related worker health and safety controls, and estimate waste volumes by waste types

1.2 Scope

This report presents the RLC and PDS radiological and chemical conditions of Buildings 566 and 566A Environmental media beneath and surrounding the facility is not within the scope of this RLCR/PDSR and will be addressed using the Soil Disturbance Permit process and in compliance with RFCA

1.3 Data Quality Objectives

The Data Quality Objectives (DQOs) used in designing this RLC/PDS were the same DQOs identified in the Pre-Demolition survey Plan for D&D Facilities (MAN-127-PDSP) Refer to section 2 0 of MAN-127-PDSP for these DQOs

2 HISTORICAL SITE ASSESSMENT

A facility-specific Historical Site Assessment (HSA) was conducted to understand the facility history and related hazards The assessment consisted of facility walkdowns, interviews, and document review, including review of the Historical Release Report (refer to the D&D Characterization Protocol, MAN-077-DDCP) These assessments were used to identify data gaps and needs, and to develop radiological and chemical characterization packages The facility-specific HSA was documented in *Historical Site Assessment Report (HSAR) for the Area 4 – Group 2 Facilities*, Dated July 2002, Revision 0 Refer to Attachment B for a copy of Buildings 566 and 566A HSAR In summary, the HSAR identified a potential for radiological and chemical hazards

3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

Buildings 566 and 566A were characterized for radiological hazards per the RLCP and PDSP Radiological characterization was performed to define the nature and extent of radioactive materials that may be present on the facility surfaces Measurements were performed to evaluate the contaminants of concern Based upon a review of historical and process knowledge, building walk-downs, and MARSSIM guidance, a Radiological Characterization Plan was developed during the planning phase that describe the minimum survey requirements (refer to the RISS Characterization Project files)

Three radiological survey packages were developed for the interior and exterior of Buildings 566 and 566A 556-4-001 (Building 566 exterior), 566A-4-002 (Building 566A interior and exterior) and 566-4-003 (Building 566 interior) The survey packages were developed in accordance with Radiological Safety Practices (RSP) 16 01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation and Closure* Total surface activity (TSA), removable surface activity (RSA), and scan measurements were collected in accordance with RSP 16 02 *Radiological Surveys of Surfaces and Structures* Radiological survey data were verified, validated and evaluated in accordance with RSP 16 04, *Radiological Survey/Sample Data Analysis* Quality control measures were implemented relative to the survey process in accordance with RSP 16 05, *Radiological Survey/Sample Quality Control*

Survey Unit 566-4-001 (Building 566 Exterior)
Thirty-four (34) TSA measurements (22 random, 10 biased and 2 QC) and thirty (30) RSA measurements (22 random and 8 biased) were performed, and a minimum of 10% of the exterior facility surfaces were scanned The RLC/PDS data confirmed that the exterior facility surfaces do not contain radiological contamination above the surface contamination guidelines provided in the PDSP

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Survey Unit 566A-4-002 (Building 566A Interior and Exterior)
Fifty-five (55) TSA measurements (15 random, 7 biased, 30 equipment and 3 QC) and fifty-two (52) RSA measurements (15 random, 7 biased and 30 equipment) were performed, and a 25% of the interior floor surfaces and 10% scan of the remaining interior and exterior surfaces were scanned The RLC/PDS data confirmed that the facility does not contain radiological contamination above the surface contamination guidelines provided in the PDSP

Survey Unit 566-4-003 (Building 566 Interior)
Eighty-three (83) TSA measurements (28 systematic, 10 biased, 40 equipment and 5 QC) and seventy-eight (78) RSA measurements (28 systematic, 10 biased and 40 equipment) were performed, and 50% of the interior floor surfaces and 10% of the interior walls, ceilings and equipment were scanned Final PDS results indicate that radiological contamination exists in excess of the PDSP unrestricted release limits of DOE Order 5400 5 in the two concrete slab trenches, the two process waste tanks, and one leg of vertical process waste piping Refer to Figure C-1 in Attachment C for the locations of the contaminated items Attachment C also contains a survey of the large trench and the isotopic results for the sludge samples from the two process waste tanks One leg of vertical process waste piping is not accessible for survey and thus, is assumed contaminated These contaminated items will be managed and disposed of as LLW during demolition All contaminated dryer ventilation system ducting was removed and disposed of as LLW prior to the PDS All other areas and equipment within Survey Unit 566-4-001 did not contain radiological contamination above the surface contamination guidelines provided in the PDSP

The radiological survey data, statistical analysis results, and survey locations are presented in Attachment C, Radiological Data Summary and Survey The radiological survey packages are maintained in the RISS Characterization Project File

4 CHEMICAL CHARACTERIZATION AND HAZARDS

Buildings 566 and 566A were characterized for chemical hazards per the PDSP Chemical characterization was performed to determine the nature and extent of chemical contamination that may be present on or in the facility Based upon a review of historical and process knowledge, visual inspections, and RLCP and PDSP DQOs, additional sampling needs were determined A Chemical Characterization Plan (refer to RISS Characterization Project files) was developed during the planning phase that describe sampling requirements and the justification for the sample locations and estimated sample numbers Contaminants of concern included asbestos, beryllium, RCRA/CERCLA constituents, and PCBs Refer to Attachment D, Chemical Data Summaries and Sample Maps, for details on sample results and sample locations

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4.1 Asbestos

A survey of building materials suspected of containing asbestos was conducted in Buildings 566 and 566A in accordance with the RLCP A CDPHE-certified asbestos inspector conducted the inspection and sampling in accordance with the *Asbestos Characterization Protocol, PRO-563-ACPR, Revision 1* Building materials suspected of containing asbestos were identified for sampling at the discretion of the inspector

A comprehensive, invasive asbestos inspection was conducted to determine the presence of friable and non-friable asbestos containing building materials A total of 49 bulk asbestos samples were taken of suspect materials within Buildings 566 and 566A All bulk samples of building materials suspected of containing asbestos were negative ("None Detected") Asbestos laboratory analysis data and sample location maps are contained in Attachment D, *Chemical Data Summaries and Sample Maps*

4.2 Beryllium (Be)

Based on the HSAR and personnel interviews, there was not adequate historical and process knowledge to conclude that beryllium was not used or stored in these buildings Therefore, random and biased beryllium sampling was performed in accordance with the PDSP and the *Beryllium Characterization Procedure, PRO-536-BCPR, Revision 0, September 9, 1999* A total of 32 random samples and 72 biased samples were collected within Buildings 566 and 566A Biased sample locations corresponded with the most probable areas of dust accumulation (including beryllium dust), assuming airborne deposition

All beryllium smear sample results were less than 0 1 $\mu g/100cm^2$ and meet the unrestricted release limits Beryllium laboratory sample data and location maps are contained in Attachment D, *Chemical Data Summaries and Sample Maps*

4.3 RCRA/CERCLA Constituents [including metals and volatile organic compounds (VOCs)]

Based on a review of the HSAR and facility walk downs, Buildings 566 and 566A contained laundry and respirator cleaning processes that may have introduced trace amounts of RCRA/CERCLA constituents to the buildings There is no evidence that contamination of RCRA/CERCLA constituents above regulatory levels could have occurred A universal waste storage and satellite accumulation area were maintained in Building 566 to manage waste derived from the respirator cleaning and alarms repair operations However, there is no record of spills related to these areas, and no evidence of contamination Based on the above information, RCRA/CERCLA constituent sampling was not performed as part of the RLC/PDS

Sampling for lead in paint in Buildings 566 and 566A was not performed Environmental Waste Compliance Guidance #27, *Lead-based Paint (LBP) and Lead-based paint Debris Disposal*, states that LBP debris generated outside of currently identified high contamination areas shall be managed as non-hazardous (solid) wastes, and additional analysis for characteristics of hazardous waste derived from LBP is not a requirement for disposal There have been no high contamination areas in Buildings 566 or 566A

Buildings 566 and 566A may contain RCRA regulated materials such as fluorescent lights and mercury switches A thorough inspection of the facilities will be made, and all regulated materials will be removed, prior to demolition

4.4 Polychlorinated Biphenyls (PCBs)

Based on the HSARs, interviews and facility walk downs of Buildings 566 and 566A, no PCB-containing equipment was ever present in the buildings, making the potential for PCB contamination resulting from spills highly unlikely Therefore, PCB sampling was not performed in Buildings 566 or 566A as part of this RLC/PDS

Based on the age of Buildings 566 and 566A (constructed after 1980), paints do not contain PCBs, and painted surfaces may be disposed of as non-routine sanitary waste Although unlikely due to the age of Buildings 566 and 566A, the facilities may contain PCB containing fluorescent light ballasts Fluorescent light fixtures will be inspected to identify PCB ballasts during removal operations PCB ballasts will be identified based on factors such as labeling (e g , PCB-containing and non-PCB-containing), manufacturer, and date of manufacturing Ballasts that do not indicate non PCB-containing are assumed to be PCB-containing Ballasts that are identified as PCB containing and are leaking will be removed prior to demolition Non leaking PCB ballasts can remain in the building and be disposed of as PCB Bulk Product Waste

5 PHYSICAL HAZARDS

Physical hazards associated with Buildings 566 and 566A consist of those common in standard industrial environments and include hazards associated with energized systems, utilities, and trips and falls The facilities have been relatively well maintained and are in good physical condition, therefore, do not present hazards associated with building deterioration There is a tank pit located in the northwest corner of the building that is approximately 23 feet long, 11 feet wide, and 12 feet deep The two radiologically contaminated process waste tanks in the pit will be removed during demolition as LLW Care should be taken during demolition activities as Buildings 566 and 566A are located near PAC 700-150 2 "Radioactive Site West of Building 771 and 776, Active" and PAC 700-1102, "IHSS currently under negotiation " Physical hazards are controlled by the Site Occupational Safety and Industrial Hygiene Program, which is based on OSHA regulations, DOE orders, and standard industry practices

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6 DATA QUALITY ASSESSMENT

Data used in making management decisions for decommissioning of Buildings 566 and 566A, and consequent waste management, are of adequate quality to support the decisions documented in this report The data presented in this report (Attachments C and D) were verified and validated relative to DOE quality requirements, applicable EPA guidance, and original DQOs of the project

In summary, the Verification and Validation (V&V) process corroborates that the following elements of the characterization process are adequate

- the *number* of samples and surveys,
- the *types* of samples and surveys,
- the sampling/survey process as implemented "in the field", and,
- the laboratory analytical process, relative to accuracy and precision considerations

Details of the DQA are provided in Attachment E

7 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES

The demolition and disposal of Buildings 566 and 566A will generate a variety of wastes Estimated waste types and waste volumes are presented below All waste can be disposed of as sanitary waste, except for the concrete slab trenches, the two process waste tanks in the NW corner pit, and the vertical process waste pipe in the SE corner of 566A, which will all be managed as LLW during demolition Refer to Figure C-1 in Attachment C for the location of these LLW items There is no asbestos, beryllium, or hazardous waste Non-leaking PCB ballasts will be managed as PCB Bulk Product Waste

Waste Volume Estimates and Material Types							
Facility	**Concrete** (cu ft)	**Wood** (cu ft)	**Metal** (cu ft)	**Corrugated Sheet Metal** (cu ft)	**Wall Board** (cu ft)	**ACM** (cu ft)	**Other Waste** (cu ft)
566	8,500	0	19,800	3,600	2,100	0	LLW Concrete Slab Trenches- 500 LLW Process Waste Tanks (2) – 200
566A	2,800	0	1,150	900	0	0	LLW Process Waste Piping – 15

8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, Buildings 566 and 566A are classified as RFCA Type 2 facilities pursuant to the RFETS Decommissioning Program Plan (DPP, K-H, 1999) The Type 2 classification is based on a review of historical and process knowledge, and newly acquired RLC/PDS data

The RLC/PDS of Buildings 566 and 566A was performed in accordance with the DDCP and PDSP requirements All RLCP and PDSP DQOs were met, and all data satisfied the RLCP and PDSP DQA criteria Final PDS results indicate that radiological contamination exists in excess of the PDSP unrestricted release limits of DOE Order 5400 5 in the two concrete slab trenches, the two process waste tanks, and one leg of vertical process waste piping Refer to Figure C-1 in Attachment C for the locations of the contaminated items These contaminated items will be managed and removed as LLW during demolition

There is no asbestos, beryllium, or hazardous waste At present, leaking PCB ballasts will be managed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations All demolition debris will be managed in compliance with regulations governing PCBs (40 CFR 761), and Environmental Compliance Guidance #27, *Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal,* as applicable Environmental media beneath and surrounding the facility will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA

To ensure Buildings 566 and 566A (Type 2 facilities) remain free of contamination and RLC/PDS data remain valid, Level 2 isolation controls have been established and the facilities posted accordingly

9 REFERENCES

DOE/RFFO, CDPHE, EPA, 1996 *Rocky Flats Cleanup Agreement (RFCA),* July 19, 1996

DOE Order 5400 5, *"Radiation Protection of the Public and the Environment "*

EPA, 1994 *"The Data Quality Objective Process,"* EPA QA/G-4

K-H, 1999 *Decommissioning Program Plan,* June 21, 1999

MAN-131-QAPM, *Kaiser-Hill Team Quality Assurance Program,* Rev 1, November 1, 2001

MAN-076-FDPM, *Facility Disposition Program Manual,* Rev 3, January 1, 2002

MAN-077-DDCP, *Decontamination and Decommissioning Characterization Protocol,* Rev 3, July 15, 2002

MAN-127-PDSP, *Pre-Demolition Survey Plan for D&D Facilities,* Rev 1, July 15, 2002

MARSSIM - *Multi-Agency Radiation Survey and Site Investigation Manual,* December 1997 (NUREG-1575, EPA 402-R-97-016)

PRO-475-RSP-16 01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation, and Closure,* Rev 1, May 22, 2001

PRO-476-RSP-16 02, *Pre-Demolition (Final Status) Radiological Surveys of Surfaces and Structures,* Rev 1, May 22, 2001

PRO-477-RSP-16 03, *Radiological Samples of Building Media,* Rev 1, May 22, 2001

PRO-478-RSP-16 04, *Radiological Survey/Sample Data Analysis for Final Status Survey,* Rev 1, May 22, 2001

PRO-479-RSP-16 05, *Radiological Survey/Sample Quality Control for Final Status Survey,* Rev 1, May 22, 2001

PRO-563-ACPR, *Asbestos Characterization Procedure,* Revision 0, August 24, 1999

PRO-536-BCPR, *Beryllium Characterization Procedure,* Revision 0, August 24, 1999

RFETS, *Environmental Waste Compliance Guidance #25, Management of Polychlorinated Biphenyls (PCBs) in Paint and Other Bulk Product Waste During Facility Disposition*

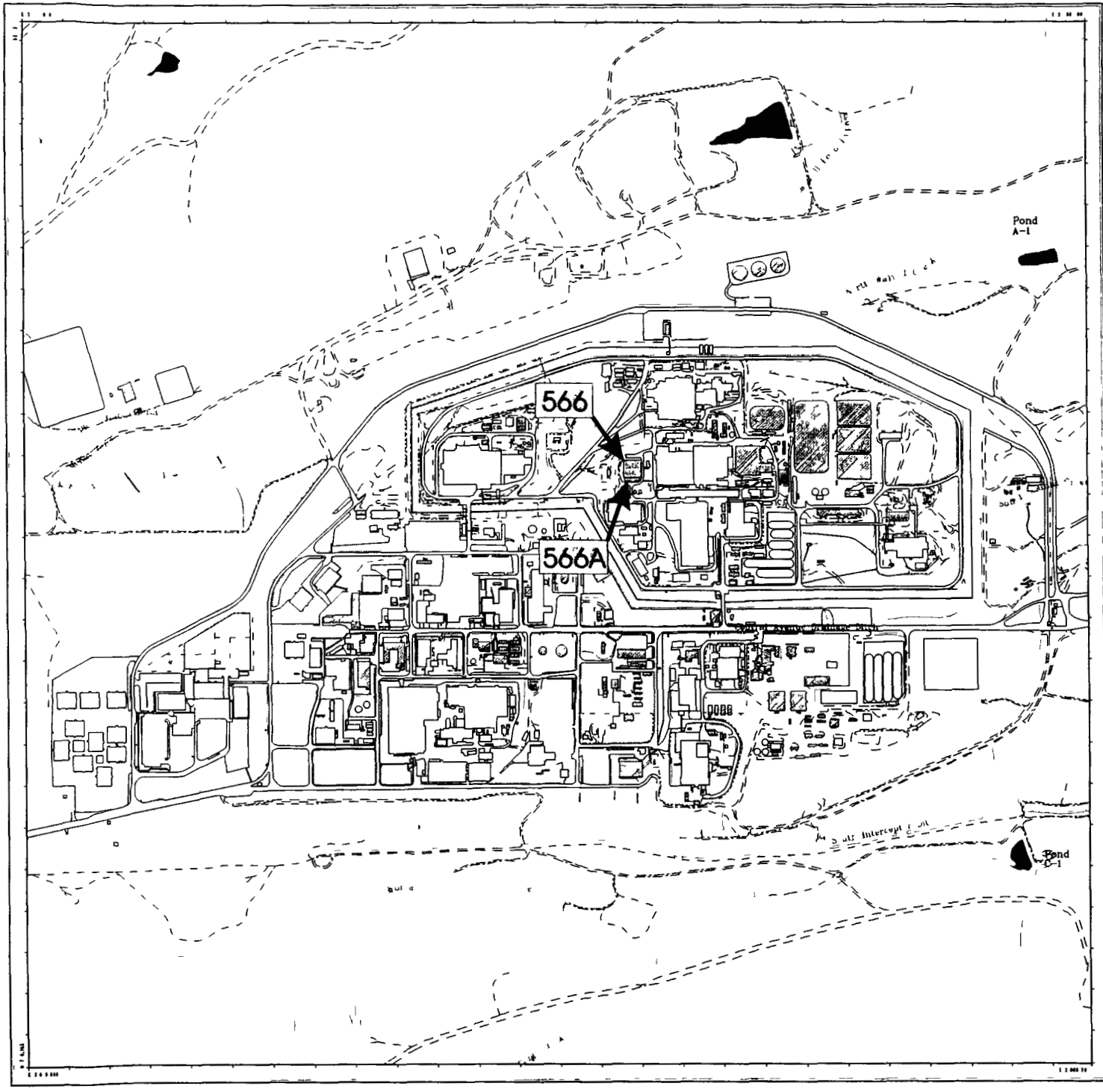
RFETS, *Environmental Waste Compliance Guidance #27, Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal*

RFCA Standard Operation Protocol for Recycling Concrete, September 28, 1999

Historical Site Assessment Report for Area 4 Group - 2 Facilities, Dated July, 2002, Revision 0

ATTACHMENT A

Facility Location Map



Buildings 566 & 566A

Standard Map Features

- Buildings and other structures
- Demolished buildings and other structures
- Lakes and ponds
- Streams, ditches or other drainage features
- Fences and other barriers
- Paved roads
- Dirt roads

DATA SOURCE BASE FEATURES
Buildings fences hydrography roads and other structures from 1994 aerial fly-over data captured by EG&G RSL, Las Vegas
Digitized from the orthophotographs 1/95

N

Scale = 1 12450
1 inch represents approximately 1038 feet

250 0 500 1000ft

State Plane Coordinate Projection
Colorado Central Zone
Datum NAD27

U S Department of Energy
Rocky Flats Environmental Technology Site

GIS Dept 303-966-7707

Prepared by
CH2MHILL

Prepared for
KAISER HILL

MAP ID FY 2003

November 24, 2003

NT_Svr w/projects/FY2003/03 0189/Area4 G2/566A.cdr

ATTACHMENT B

Historical Site Assessment Report

D&D RISS Facility Characterization
Historical Site Assessment Report
July, 2002 Rev. 0

Facility ID (Area 4 – Group 2) - Buildings 556, 566A, 569, 570, T760A, 790, and 906
Anticipated Facility Type (1, 2, or 3) Buildings 556, 566A are anticipated Type 2 facilities Buildings 569, 570, T760A, 790 and 906 are anticipated Type 1 facilities

This facility-specific Historical Site Assessment (HSA) has been performed in accordance with *D&D Characterization Protocol*, RFETS MAN-077-DDCP, latest version, and *Facility Disposition Program Manual*, RFETS MAN-076-FDPM, latest version

Physical Description

Building 566 and 566A

Building 566 and 566A are a single structure divided in to a 13,700 sq ft Site Alarm Maintenance and Respirator Repair Facility and the 4000 sq ft filter plenum designated Buildings 566 and 566A Building 566A is basically the administrative portion of the 566 building Both facilities were constructed in the 1991 The walls are reinforces concrete, the roof is constructed with a metal sheet, lightweight concrete, insulation and a synthetic membrane to seal the roof The floor is pored concrete

Building 566 and 566A have the following utilities electric, plant water, plant sanitary, process waste line (lock and tagged-out) and an overhead sprinkler system and wall-mounted fire extinguishers provide fire protection

Building 569

Building 569, also known as the Crate Counting Facility, is a 7620 sq ft single-story building constructed in 1987 Building 569 is a prefabricated modular building constructed on a concrete slab The walls are constructed of metal siding mounted on a steel frame The roof is an insulated metal roof mounted to a steel frame

Building 569 has the following utilities, electric, plant water, plant sanitary, plant stream and fire protection is provided by wall-mounted fire extinguishers

Building 570

Building 570 is the filter plenum for the Crate Counting Facility and is a 683 sq ft building constructed in 1987 Building 570 is a concrete building with 12-in thick reinforced concrete walls and a concrete floor The roof is constructed with insulated sheet metal supported by steel joists

Building 570 has the following utilities, electric, plant water, plant stream, and a plenum deluge system and wall-mounted fire extinguishers provide fire protection

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Trailer T760A

Trailer T760A is a 500 square foot shower trailer This trailer was placed into service in 1990 and is located south of the 750 Pad T760A has aluminum siding and aluminum skirting Each entry has wooden steps leading to the entry doors The interior is configured with a separate men and woman's shower, toilet and locker room facility The interior walls are wallboard and the floors are vinyl tiles There is a propane gas tank located west of the trailer

Trailer T760A has the following utilities electric, propane gas, plant water, plant sanitary, and fire protection is provided by wall mounted fire extinguishers The water and gas systems have been shut off

Building 790

Building 790 is a 6,768-sq ft single-story concrete building constructed in 1991 The building consists of three irradiation cells (A, B, and C) an instrument calibration support area, a control room, and an office area The irradiation cells and control room are constructed of 2-feet-thick concrete walls The instrument calibration support and office areas are constructed of masonry blocks and steel reinforcement The floors are poured in place concrete The roof is constructed with insulated sheet metal supported by steel joists

Building 790 has the following utilities, electric, plant water, plant sanitary, natural gas, and fire protection is provided by an overhead sprinkler system and wall mounted fire extinguishers

Building 906

Building 906 is a 25,000 square foot TRU waste storage facility Building 906 was constructed in 1994 as a LLW storage facility In 2000 it had its ventilation system, fire protection system, alarm system and lightning protection systems up-grades to comply with the TRU waste storage requirements Building 906 is a steel frame building constructed on a concrete pad The walls and roof are insulated aluminum mounted on the steel frame

Building 906 has the following utilities, electric, fire protection is provided by an overhead sprinkler system and wall mounted fire extinguishers

Historical Operations

Building 566 and 566A

Buildings 556 and 566A were originally constructed to be the site laundry facility Laundry operations only lasted for about 2 years, and the facility was never approved to handle the highly contaminated laundry Building 566 has always housed Respirator Cleaning and Repair operations In 1999, the Alarms Maintenance Servicing Center moved into the 566 building

Alarm maintenance involves cleaning equipment, replaces faulty components, and testing and inspecting equipment The Respirator Cleaning and Repairs Facility contains a respirator washer, laundry carts, radioactivity monitoring equipment detergent, bleach and water are used in the respirator washing process Wastewater drains into two storage tanks located in the Building 566 pit and is then pumped to the sanitary drain Building 566 has a process waste line which had been locked-out Respirators and Alarm equipment are surveyed for radioactivity prior to being transported to Building 566

In the late 1990s, the B566 ventilation air filter plenum was surveyed and no radiological contamination was found The radiological posting were removed from the plenum In the late 1990s, the washers and dryers were removed and the waste trench under the washers was surveyed Only very low levels of contamination were found and the trench was decontaminated (using power washer)

Building 569

Building 569 contains radioactivity assay equipment and temporary waste storage operations Building 569 is also RCRA Unit 59 Containers of low-level, low-level mixed, transuranic and transuranic mixed waste are received from throughout the plant and assayed using a passive-active counter Containers are assayed prior being accepted into Building 569 Containers whose contents meet the package criteria are transported to Buildings 664, 440, or 906 for storage pending off-site shipment Those containers not meeting the package criteria, or which exhibit physical damage or improper packing are identified for repackaging No unpacking or repackaging is performed in Building 569

Building 570

Building 570 was built as the Building 569 air plenum, but has never been activated and has never housed any radiological or hazardous operation

Trailer T760A

T760A was used as a shower trailer for workers at the 904 Pad and the pondcrete operation on the 750 Pad The trailer had no radiological or hazardous operations Routine radiological surveys show no evidence of contamination

Building 790

Building 790 was designed to perform radiometric calibrations Specifically, it is used to expose thermoluminesent dosimeters (TLD) and calibrate site health physics instrumentation The building consists of three irradiation cells (A, B, and C) an instrument calibration support area, a control room, and an office area This facility uses and stores sealed sources and X-ray generating equipment

Cell A is a hexagonal shaped two-story, low neutron-scatter-design silo that houses the Pneumatic Source Transfer System (PSTS) for neutron flux calibration of TLDs and radiation survey equipment Cell B contains an X-ray generating system for the calibration of portable radiation measurement instruments and to irradiate TLDs Cell C contains high-level gamma irradiators, which are used for gamma irradiation of TLDs and instruments No hazardous chemicals are stored in Building 790, other than general cleaning supplies and small quantities (less than 1 pint) of alcohol and acetone to clean some instrument parts

Sources stored in Building 790 include, but are not limited to Pu, Am, Sr-90, Cf, Cs, Co-60, Ba, and Pm

Building 906

Building 906, also referred to as Central Waste Storage, is RCRA Unit 14 and was constructed in 1994 as a LLW storage facility In 2000 it had its ventilation system, fire protection system, alarm system and lightning protection systems up-graded to comply with the TRU waste storage requirements Building 906 is currently permitted to store LLW, TRU, Mixed Waste, and TSCA waste, but primarily stores TRU waste Building 906 has had no spills and there is no evidence of any building contamination Some areas of the Building 906 have elevated dose rates caused by the TRU waste stored in the building

Current Operational Status

Building 556 is operational as the site's Alarm Maintenance Center and the Respirators Cleaning and Repair Facility Building 566A (air plenum for Building 566) in not operational Building 569 is the Crate Counting Facility and is operational Building 570 (the air plenum for Building 569) is not operational Trailer T760A is a shower trailer and is not operational Building 790 is currently operational as the site's Radiation Calibration Laboratory Building 906 is currently operational as a TRU waste storage area

Contaminants of Concern

Asbestos

Describe any potential, likely, or known sources of Asbestos

None of the buildings in this HSA have an asbestos posting Building 569 is posted as being asbestos free The posting references Document # JAF–010-90 The other facilities in this HSA have not had a comprehensive asbestos survey

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Beryllium (Be)

Describe any potential, likely, or known Be production or storage locations

None of the buildings addressed in this HSA are on the List of known Be Areas Respirators, which have been released from Beryllium areas are cleaned and repaired in Building 566 There is no history of beryllium building contamination associated with this activity

Summarize any recent Be sampling results

Contact the IH group for any resent Be sample results

Lead

Describe any potential, likely, or known sources of Lead (e g , paint, shielding, etc)

Given the age of the facilities addressed in this HSA, lead in paint should not be a concern Building 790 and 569 have some lead shielding in the assay equipment

RCRA/CERCLA Constituents

Describe any potential, likely, or known sources of RCRA/CERCLA constituents (e g , chemical storage, waste storage, and processes)

Some of the facilities addressed in this HSA have potentially internally contaminated equipment, but there is not a history of significant building contamination associated with the Building operations See "Historical Operations" section above for a detailed description of the operations that occurred in each facility addressed in this HSA

See the "Environmental Concerns" section below for IHSSs and PACs associated with this building See the Building specific WSRIC for more detailed listing of the waste streams associated with each building addressed in this HSA

Describe any potential, likely, or known spill locations (and sources, if any)

None

Describe methods in which spills were mitigated, if any

None

2/

PCBs

Describe any potential, likely, or known sources of PCBs (e g , light ballasts, paints, equipment, etc)

Due to the age of the facilities addressed in this HSA, there should not be a concern with PCBs in paint PCBs where not known to have been handled in any of these facilities

Describe any potential, likely, or known spill locations (and sources, if any)

No PCB spills occurred in any of the facilities addressed in this HSA

Describe methods in which spills were mitigated, if any

No PCB spills occurred in any of the facilities addressed in this HSA

Radiological Contaminants

Describe any potential, likely, or known radiological production or storage locations

Some of the facilities addressed in this HSA have potentially internally contaminated equipment, but there is not a history of significant building contamination associated with the Building operations See "Historical Operations" section above for a detailed description of the operations that occurred in each facility addressed in this HSA

See the "Environmental Concerns" section below for IHSSs and PACs associated with this building See the Building specific WSRIC for more detailed listing of the waste streams associated with each building addressed in this HSA

Describe any potential, likely, or known spill locations (e g , known leaking sealed radioactive sources, leaking waste drums, potentially contaminated drains, etc)

None

Describe methods in which spills were mitigated, If any

None

Describe any potential, likely, or known isotopes of concern (e g , weapons grade plutonium, uranium isotopes, pure beta emitters, mixed fission products, etc)

The primary Isotope of concern includes, but is not limited to uranium and plutonium Other than sealed sources, there were no known mixed fission products or pure beta emitters used in any of the facilities addressed in this HSA

Describe any potential, likely, or known external facility contamination (e g , stack release points, unfiltered ventilation, facility's physical location to known site releases, etc)

See section below for information on IHSSs PACs, and UBCs

22

Environmental Restoration Concerns

Describe any ER concerns that could affect facility characterization (e g , IHSSs, PACs, UBCs)

Building 566 and 556A are associated with or located near the following IHSSs, PACs, and UBCs,

1) PAC 700-150 2 "Radioactive site west of Building 771 and 776 ", Active
2) PAC 700-1102 "776-4", This IHSS was proposed NFA in 1997 and again in 2001 This NFA has not been approved and is currently under negotiation

Building 567 and 570 are associated with or located near the following IHSSs, PACs, and UBCs,

1) PAC 700-150 5 "Radioactive site west of Building 707 ", Proposed NFA in 1998

Buildings 790, 906, and Trailer T760A are not associated with or located near any IHSSs, PACs, and UBCs,

Additional Information

Describe any additional information that may be useful during facility characterization (e g , contaminant migration routes, waste handling operations, physical hazards, Historical Release Reports, WSRIC data, etc)

None

References

Provide all sources of information utilized to gather data for facility history (e g , documents, files, interviews)

Sources reviewed to complete this HSA were the RFETS Facility List, the Historical Release Report, Site Master List of RCRA Units, and the Site IHSS, PAC, and UBC databases The Building WSRIC for those Buildings with a WSRIC In addition, a facility walkdowns and interviews were performed

Waste Volume Estimates and Material Types

Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste (cu ft)
Building 566	8500	0	19800	3600	2100	TBD	N/A
Building 566A	2800	0	1150	900	0	TBD	N/A
Building 569	4000	0	1100	2000	1000	TBD	N/A
Building 570	3900	0	700	200	0	TBD	N/A
Trailer T760A	None	200	300	350	450	TBD	N/A
Building 790	24,000	0	1900	800	1200	TBD	N/A
Building 906	13,000	0	3000	3500	0	TBD	N/A

Further Actions

Recommend any further actions, if any (e g , characterization, decontamination, special handling, etc)

Begin the RLC/PDS process

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Note:
This HSA was performed prior to SME walkdowns, and chemical and radiological characterization package preparations SMEs should evaluate and/or verify all information during the RLC/PDS process SMEs may need to review additional documentation and perform additional interviews Information contained in this HSA only represents a "snapshot" in time Subsequent data may be obtained during SME walkdowns and chemical and radiological characterization package preparations, which may conflict with this report However, this report will not be amended, and the newer data will take precedence over the data in this report Newer Data will appear in the RLCR/PDSR.

Prepared By Doug Bryant / /s/ / July 2002
Name Signature Date

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ATTACHMENT C

Radiological Data Summaries and Survey Maps

SURVEY UNIT 566-4-001
RADIOLOGICAL DATA SUMMARY - PDS

Survey Unit Description: B566 (Exterior)

26

Total Surface Activity Measurements

	30 Number Required	32 Number Obtained	
MIN	17 3		dpm/100 cm^2
MAX	87 6		dpm/100 cm^2
MEAN	50 3		dpm/100 cm^2
STD DEV	18 1		dpm/100 cm^2
TRANSURANIC DCGL$_W$	100		dpm/100 cm^2

Removable Activity Measurements

	30 Number Required	30 Number Obtained	
MIN	1 2		dpm/100 cm^2
MAX	2 4		dpm/100 cm^2
MEAN	0 3		dpm/100 cm^2
STD DEV	0 9		dpm/100 cm^2
TRANSURANIC DCGL$_W$	20		dpm/100 cm^2

SURVEY UNIT 566-4-001
TSA - DATA SUMMARY

Manufacturer	NE Tech	NE Tech	NE Tech	NE Tech
Model	DP 6	DP 6	DP 6	DP 6
Instrument ID#	1	2	3	4
Serial #	1273	1273	2344	1417
Cal Due Date	1/9/04	1/9/04	1/29/04	1/21/04
Analysis Date	8/21/03	8/22/03	8/22/03	8/25/03
Alpha Eff (c/d)	0 212	0 212	0 220	0 218
Alpha Bkgd (cpm)	6 7	3 3	2 0	2 7
Sample Time (min)	1 5	1 5	1 5	1 5
LAB Time (min)	1 5	1 5	1 5	1 5
MDC (dpm/100cm^2)	48 0	48 0	48 0	48 0

Manufacturer	NE Tech	NE Tech	NE Tech	NE Tech	NE Tech
Model	DP 6	DP 6	DP 6	DP 6	DP 6
Instrument ID#	5	6	7	8	13
Serial #	1417	1273	1420	2344	2352
Cal Due Date	1/21/04	1/9/04	12/4/03	1/29/04	2/8/04
Analysis Date	9/2/03	9/2/03	9/3/03	9/3/03	9/17/03
Alpha Eff (c/d)	0 218	0 212	0 225	0 220	0 228
Alpha Bkgd (cpm)	3 3	1 3	2 0	2 0	2 0
Sample Time (min)	1 5	1 5	1 5	1 5	1 5
LAB Time (min)	1 5	1 5	1 5	1 5	1 5
MDC (dpm/100cm^2)	48 0	48 0	48 0	48 0	48 0

Sample Location Number	Instrument ID#	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1,2]
1	6	18 7	88 2	5 3	25 0	72 0
2	4	14 0	64 2	5 3	24 3	48 1
3	6	9 3	43 9	3 3	15 6	27 7
4	2	14 7	69 3	0 7	3 3	53 2
5	3	17 3	78 6	2 7	12 3	62 5
6	5	12 7	58 3	3 3	15 1	42 1
7	3	14 0	63 6	1 3	5 9	47 5
8	2	13 3	62 7	5 3	25 0	46 6
9	2	18 0	84 9	5 3	25 0	68 7
10	3	18 0	81 8	2 7	12 3	65 7
11	5	14 7	67 4	2 0	9 2	51 3
12	3	17 3	78 6	4 0	18 2	62 5
13	2	22 0	103 8	2 7	12 7	87 6
14	1	14 0	66 0	2 0	9 4	49 9
15	5	16 7	76 6	2 7	12 4	60 4
16	3	17 3	78 6	4 0	18 2	62 5
17	4	13 3	61 0	2 0	9 2	44 8
18	1	15 3	72 2	2 7	12 7	56 0
19	3	17 3	78 6	2 7	12 3	62 5
20	5	12 0	55 0	4 0	18 3	38 9
21	2	13 3	62 7	2 7	12 7	46 6
22	4	7 3	33 5	6 7	30 7	17 3
23	4	18 7	85 8	5 3	24 3	69 6

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SURVEY UNIT 566-4-001
TSA - DATA SUMMARY

Sample Location Number	Instrument ID#	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1,2]
24	4	10 7	49 1	4 7	21 6	32 9
25	4	8 7	39 9	5 3	24 3	23 7
26	4	14 0	64 2	5 3	24 3	48 1
27	7	10 0	44 4	1 3	5 8	28 3
28	7	8 7	38 7	4 7	20 9	22 5
29	7	9 3	41 3	4 0	17 8	25 2
30	7	10 7	47 6	2 7	12 0	31 4
31	13	19 7	86 4	3 3	14 5	70 2
32	13	22 7	99 6	2 7	11 8	83 4

16 2	Sample LAB Average
MIN	17 3
MAX	87 6
MEAN	50 3
SD	18 1
Transuranic $DCGL_W$	100

1 Average LAB used to subtract from Gross Sample Activity

2 The initial Sample Net Activity for scan sample locations 31 and 32 were 159 5 and 198 6 dpm/100cm2 respectively
These locations were sealed and allow to decay The re survey results are reported
There are no RSC results for locations 31 and 32

QC Measurements

10 QC	2	15 3	72 2	3 3	15 6	61 4
23 QC	8	11 3	51 4	1 3	5 9	40 6

10 7	QC LAB Average
MIN	40 6
MAX	61 4
MEAN	51 0
Transuranic $DCGL_W$	100

1 Average QC LAB used to subtract from Gross Sample Activity

29

SURVEY UNIT 566-4-001
RSC - DATA SUMMARY

Manufacturer	Eberline	Eberline	Eberline	Eberline
Model	SAC 4	SAC-4	SAC-4	SAC-4
Instrument ID#	9	10	11	12
Serial #	952	1164	924	959
Cal Due Date	1/10/04	11/30/03	10/23/03	1/14/04
Analysis Date	9/9/03	9/9/03	9/9/03	9/9/03
Alpha Eff (c/d)	0 33	0 33	0 33	0 33
Alpha Bkgd (cpm)	0 3	0 1	0 4	0 2
Sample Time (min)	2	2	2	2
Bkgd Time (min)	10	10	10	10
MDC (dpm/100cm^2)	9 0	9 0	9 0	9 0

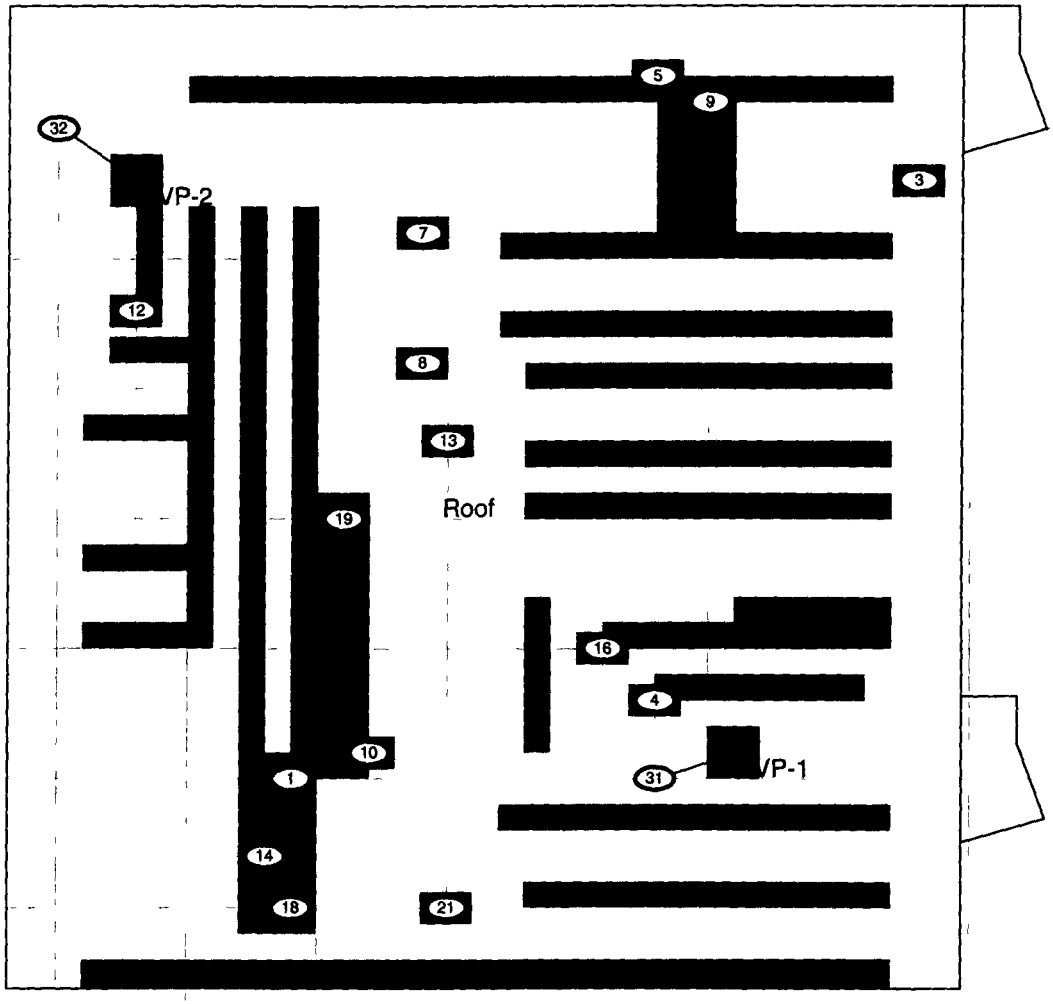
Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm^2)
1	9	0	-0 9
2	10	0	-0 3
3	11	0	-1 2
4	12	0	-0 6
5	9	0	-0 9
6	10	1	1 2
7	11	1	0 3
8	12	0	-0 6
9	9	1	0 6
10	10	0	-0 3
11	11	0	-1 2
12	12	0	-0 6
13	9	0	-0 9
14	10	0	-0 3
15	11	2	1 8
16	12	0	0 6
17	9	0	-0 9
18	10	0	-0 3
19	11	0	-1 2
20	12	2	2 4
21	9	0	0 9
22	10	0	-0 3
23	11	0	-1 2
24	12	0	0 6
25	9	0	-0 9
26	10	0	0 3
27	11	1	0 3
28	12	0	-0 6
29	9	0	-0 9
30	10	0	-0 3
		MIN	-1 2
		MAX	2 4
		MEAN	0 3
		SD	0 9
		Transuranic DCGL$_W$	**20**

30

PRE-DEMOLITION SURVEY FOR B566

Survey Area 4 **Survey Unit 566-4-001** **Classification 3**
Building 566
Survey Unit Description 566 Exterior
Total Area 2,564 sq m **Total Floor Area 1,409 sq m**

B566 Exterior



Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30
0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s)
1, 2, 3, 4, 5, 6, 7

U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by GIS Dept. 303-966-7707 Prepared for

CH2MHILL Communications Group

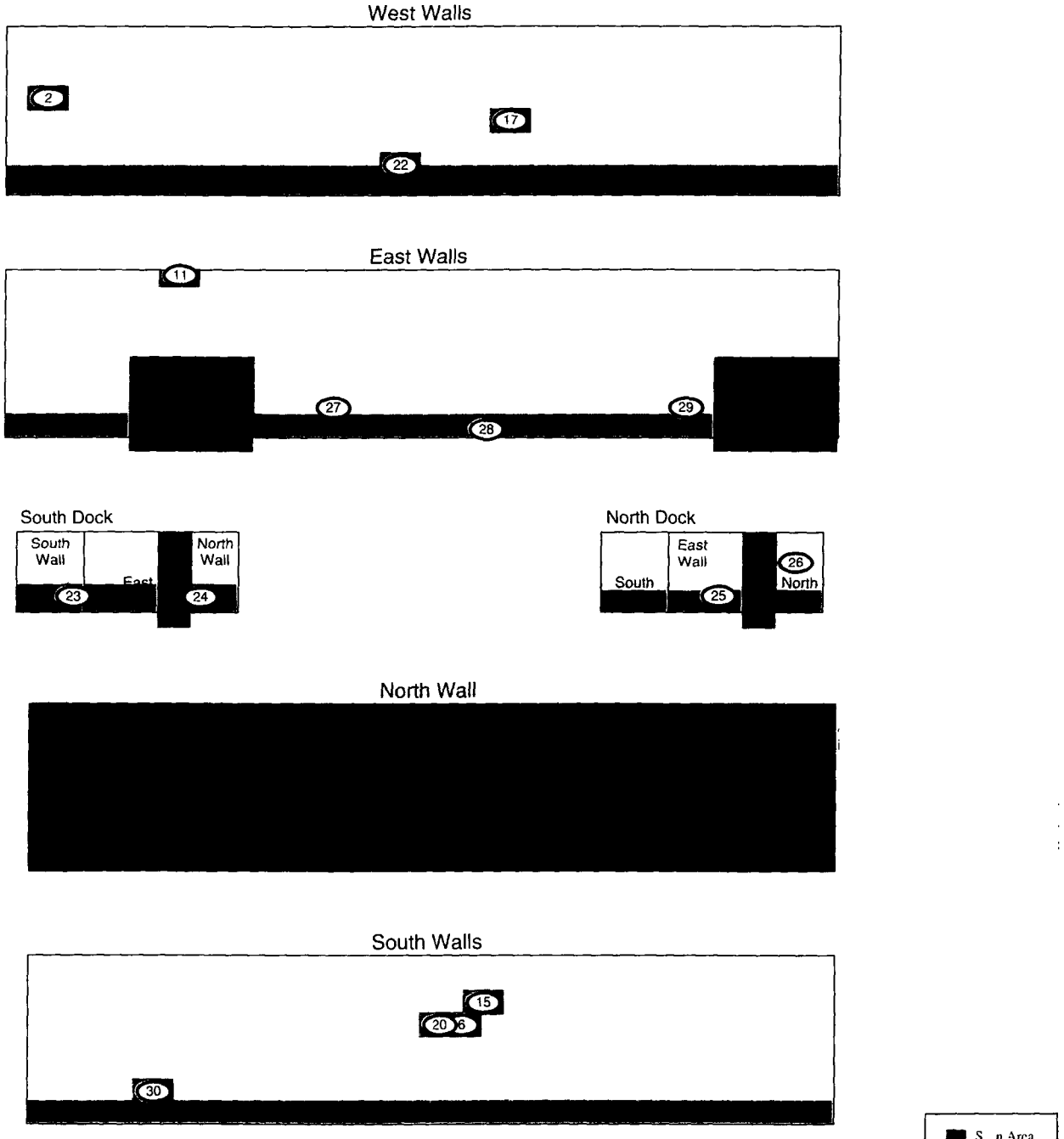
MAP ID 03-0189/B566-EX1-SC Sept 15, 2003

31

PRE DEMOLITION SURVEY FOR B566

Survey Area 4 **Survey Unit** 566 4-001 **Classification** 3
Building 566
Survey Unit Description 566 Exterior
Total Area 2 564 sq m **Total Floor Area** 1 409 sq m

B566 Exterior



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear TSA & Sample Location
- Open/Inaccessible Area
- Area n Another S rv y Unit

S n Area

N

0 FEET 30
0 METERS 10

1 nch 24 feet 1 or d q = 1 sq m

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s)
1 2 3 4 5 6, 7

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CH2MHILL

KAISER HILL

MAP ID 03-0189/B566-EX2 SC Sept 15 2003

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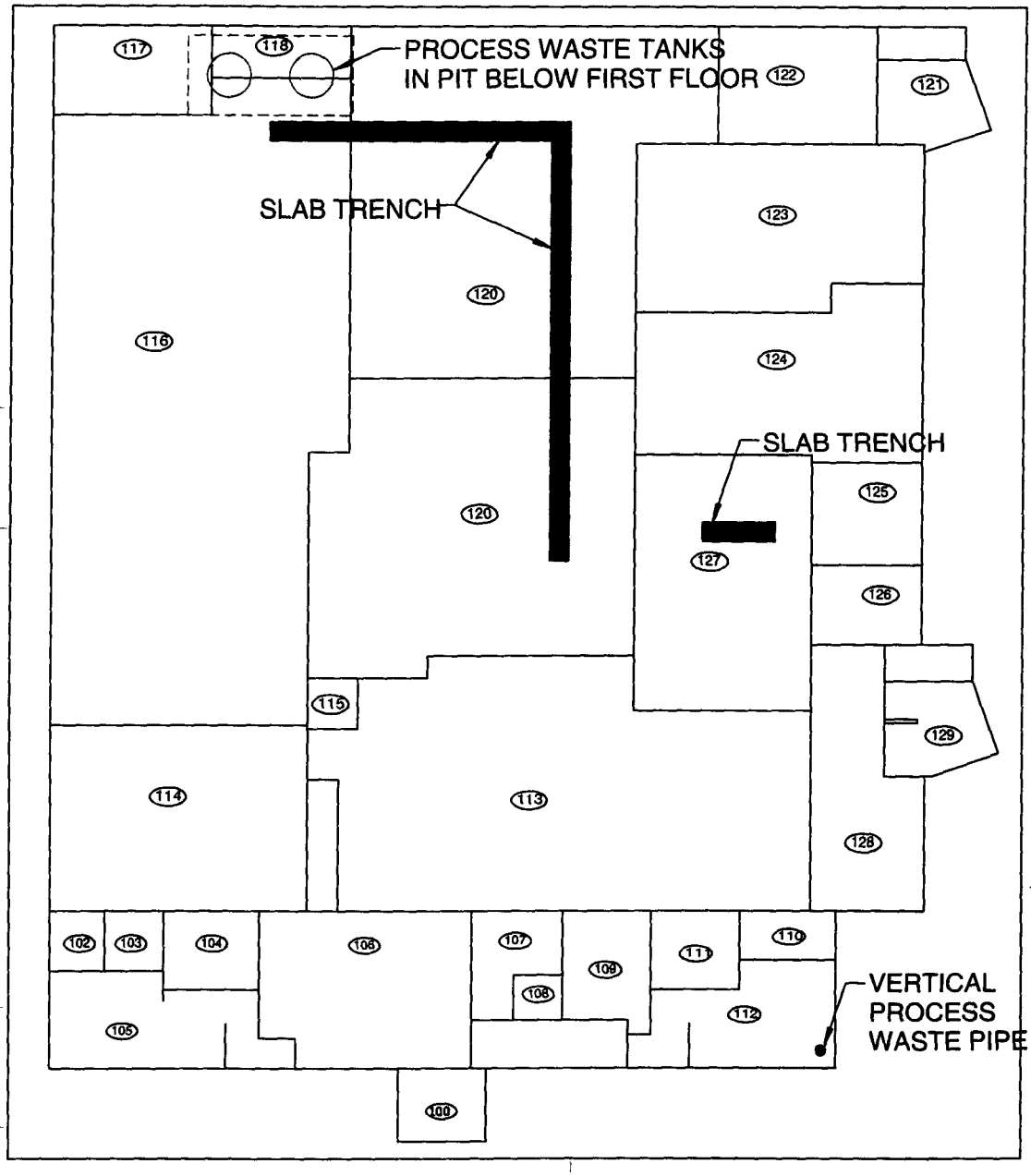
FIGURE C-1



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N

0 FEET 30

0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by GIS Dept 303-966-7707

Prepared for

CH2MHILL
Communications Group

MAP ID 03-0189/B566-Fig1

Nov 19, 2003

SURVEY UNIT 566A-4-002
RADIOLOGICAL DATA SUMMARY - PDS

Survey Unit Description. B566A (Interior & Exterior)

34

Total Surface Activity Measurements

	50 Number Required	52 Number Obtained	
MIN	-15 5		dpm/100 cm^2
MAX	78 8		dpm/100 cm^2
MEAN	16 2		dpm/100 cm^2
STD DEV	20 2		dpm/100 cm^2
TRANSURANIC DCGL$_W$	100		dpm/100 cm^2

Removable Activity Measurements

	50 Number Required	52 Number Obtained	
MIN	-1 2		dpm/100 cm^2
MAX	2 7		dpm/100 cm^2
MEAN	-0 3		dpm/100 cm^2
STD DEV	0 9		dpm/100 cm^2
TRANSURANIC DCGL$_W$	20		dpm/100 cm^2

SURVEY UNIT 566A-4-002
TSA - DATA SUMMARY

Manufacturer	NE Tech	NE Tech	NE Tech	NE Tech	NE Tech	NE Tech	NE Tech
Model	DP 6	DP 6	DP 6	DP 6	DP 6	DP 6	DP 6
Instrument ID#	1	2	3	4	5	6	7
Serial #	1273	1547	1417	1417	2344	1273	1549
Cal Due Date	1/9/04	11/20/03	1/21/04	1/21/04	1/29/04	1/9/04	12/30/03
Analysis Date	8/21/03	8/21/03	8/25/03	9/2/03	9/4/03	9/9/03	9/9/03
Alpha Eff (c/d)	0 212	0 223	0 218	0 218	0 220	0 212	0 220
Alpha Bkgd (cpm)	6 7	6 7	2 7	3 3	2 7	0 7	3 0
Sample Time (min)	1 5	1 5	1 5	1 5	1 5	1 5	1 5
LAB Time (min)	1 5	1 5	1 5	1 5	1 5	1 5	1 5
MDC (dpm/100cm^2)	48 0	48 0	48 0	48 0	48 0	48 0	48 0

Sample Location Number	Instrument ID#	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1,2]
1	5	11 3	51 4	4 7	21 4	35 8
2	5	5 7	25 9	4 7	21 4	10 4
3	5	2 7	12 3	2 7	12 3	3 3
4	5	6 7	30 5	2 7	12 3	14 9
5	5	0 0	0 0	2 7	12 3	15 5
6	6	5 3	25 0	4 0	18 9	9 5
7	5	2 7	12 3	4 7	21 4	3 3
8	5	4 0	18 2	3 3	15 0	2 6
9	3	8 7	39 9	5 3	24 3	24 4
10	1	20 0	94 3	3 3	15 6	78 8
11	5	2 7	12 3	0 7	3 2	3 3
12	2	16 0	71 7	6 7	30 0	56 2
13	1	14 7	69 3	2 0	9 4	53 8
14	2	19 3	86 5	4 0	17 9	71 0
15	5	10 7	48 6	2 0	9 1	33 1
16	3	10 0	45 9	8 0	36 7	30 3
17	4	13 3	61 0	4 0	18 3	45 5
18	6	5 3	25 0	2 0	9 4	9 5
19	6	1 3	6 1	0 7	3 3	9 4
20	7	9 3	42 3	3 3	15 0	26 7
21	7	6 7	30 5	3 3	15 0	14 9
22	6	4 0	18 9	2 7	12 7	3 3
23	6	4 7	22 2	4 0	18 9	6 6
24	6	4 7	22 2	2 0	9 4	6 6
25	7	5 3	24 1	3 3	15 0	8 5
26	7	8 7	39 5	4 7	21 4	24 0
27	6	6 0	28 3	4 0	18 9	12 8
28	7	3 3	15 0	2 7	12 3	-0 5
29	6	5 3	25 0	0 7	3 3	9 5
30	6	1 3	6 1	4 7	22 2	9 4
31	6	4 0	18 9	2 0	9 4	3 3
32	6	8 0	37 7	3 3	15 6	22 2
33	7	5 3	24 1	2 7	12 3	8 5
34	7	6 7	30 5	2 7	12 3	14 9
35	7	6 0	27 3	3 3	15 0	11 7
36	7	3 3	15 0	2 0	9 1	-0 5
37	7	7 3	33 2	1 3	5 9	17 6
38	6	16 7	78 8	2 0	9 4	63 2
39	7	4 0	18 2	2 7	12 3	2 6
40	7	4 0	18 2	2 0	9 1	2 6
41	6	5 3	25 0	5 6	26 4	9 5
42	7	8 0	36 4	2 7	12 3	20 8
43	7	4 7	21 4	1 3	5 9	5 8
44	6	4 0	18 9	1 3	6 1	3 3
45	6	6 7	31 6	2 7	12 7	16 1
46	6	4 7	22 2	4 7	22 2	6 6
47	7	6 7	30 5	6 0	27 3	14 9

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SURVEY UNIT 566A-4-002
TSA - DATA SUMMARY

Sample Location Number	Instrument ID#	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1,2]
48	7	1 3	5 9	4 0	18 2	9 6
49	7	7 3	33 2	3 3	15 0	17 6
50	7	7 3	33 2	3 3	15 0	17 6
51	4	8 0	36 7	8 0	36 7	21 1
52	4	9 3	42 7	5 3	24 3	27 1
					15 5	Sample LAB Average
					MIN	15 5
					MAX	78 8
					MEAN	16 2
					SD	20 2
					Transuranic $DCGL_W$	100

1 Average LAB used to subtract from Gross Sample Activity

QC Measurements

38 QC	7	20 7	94 1	4 7	21 4	78 3
42 QC	6	5 3	25 0	2 9	13 7	9 2
17 QC	7	6 0	27 3	2 7	12 3	11 5
					15 8	QC LAB Average
					MIN	9 2
					MAX	78 3
					MEAN	33 0
					Transuranic $DCGL_W$	100

1 Average QC LAB used to subtract from Gross Sample Activity

37

SURVEY UNIT 566A-4-002
RSC - DATA SUMMARY

Manufacturer	Eberline	Eberline	Eberline
Model	SAC-4	SAC-4	SAC-4
Instrument ID#	8	9	10
Serial #	1164	924	959
Cal Due Date	11/30/03	10/23/03	1/14/04
Analysis Date	9/11/03	9/11/03	9/11/03
Alpha Eff (c/d)	0 25	0 25	0 25
Alpha Bkgd (cpm)	0 2	0 1	0 4
Sample Time (min)	2	2	2
Bkgd Time (min)	10	10	10
MDC (dpm/100cm^2)	9 0	9 0	9 0

Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm^2)
1	8	0	-0 6
2	9	0	0 3
3	10	0	-1 2
4	8	0	-0 6
5	9	1	1 2
6	10	0	-1 2
7	8	0	-0 6
8	9	0	-0 3
9	10	0	1 2
10	8	0	-0 6
11	9	1	1 2
12	10	0	-1 2
13	8	1	0 9
14	9	1	1 2
15	10	0	-1 2
16	8	0	-0 6
17	9	0	-0 3
18	10	0	-1 2
19	8	0	-0 6
20	9	0	-0 3
21	10	0	-1 2
22	8	0	-0 6
23	9	0	-0 3
24	10	0	-1 2
25	8	0	-0 6
26	9	0	-0 3
27	10	1	0 3
28	8	0	-0 6
29	9	1	1 2
30	10	0	-1 2
31	8	0	0 6
32	9	0	-0 3
33	10	0	-1 2
34	8	1	0 9
35	9	0	-0 3
36	10	0	1 2
37	8	0	-0 6
38	9	2	2 7

35

SURVEY UNIT 566A-4-002
RSC - DATA SUMMARY

Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm^2)
39	10	0	-1 2
40	8	0	-0 6
41	9	0	-0 3
42	10	0	-1 2
43	8	0	-0 6
44	9	1	1 2
45	10	0	-1 2
46	8	1	0 9
47	9	0	-0 3
48	10	0	-1 2
49	8	1	0 9
50	9	0	-0 3
51	10	0	-1 2
52	8	1	0 9
		MIN	1 2
		MAX	2 7
		MEAN	-0 3
		SD	0 9
		Transuranic $DCGL_W$	**20**

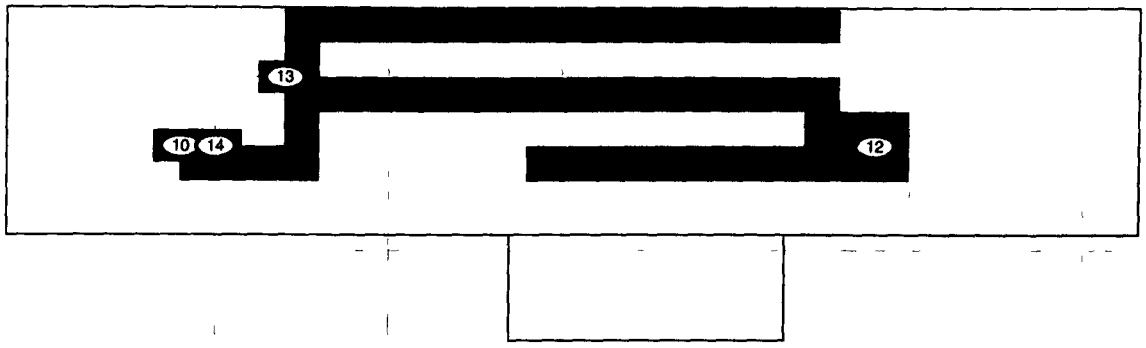
39

PRE-DEMOLITION SURVEY FOR B566A

Survey Area 4 **Survey Unit** 566A-4-002 **Classification** 3
Building 566A
Survey Unit Description 566A Interior & Exterior
Total Area 1,462 sq m **Total Floor Area** 214 sq m
Total Roof Area 429 sq m

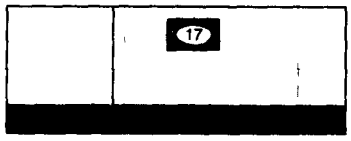
B566A Exterior

Roof

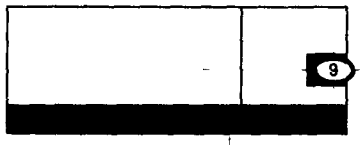


North Wall

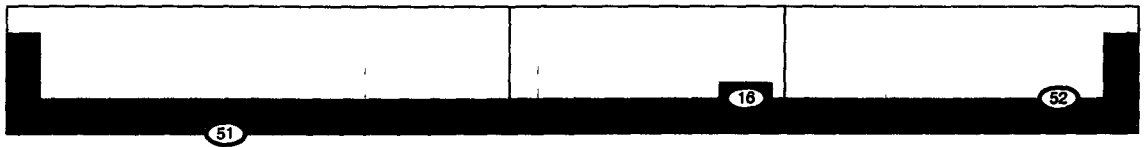
East Wall



West Wall



South Wall



Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25
0 METERS 8

1 inch = 18 feet 1 grid sq = 1 sq m

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s)
1, 2, 3, 4, 5, 6, 7

U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by GIS Dept 303-966-7707 Prepared for

CH2MHILL
Communications Group

MAP ID 03-0189/B566A-EX1-SC Sept 17, 2003

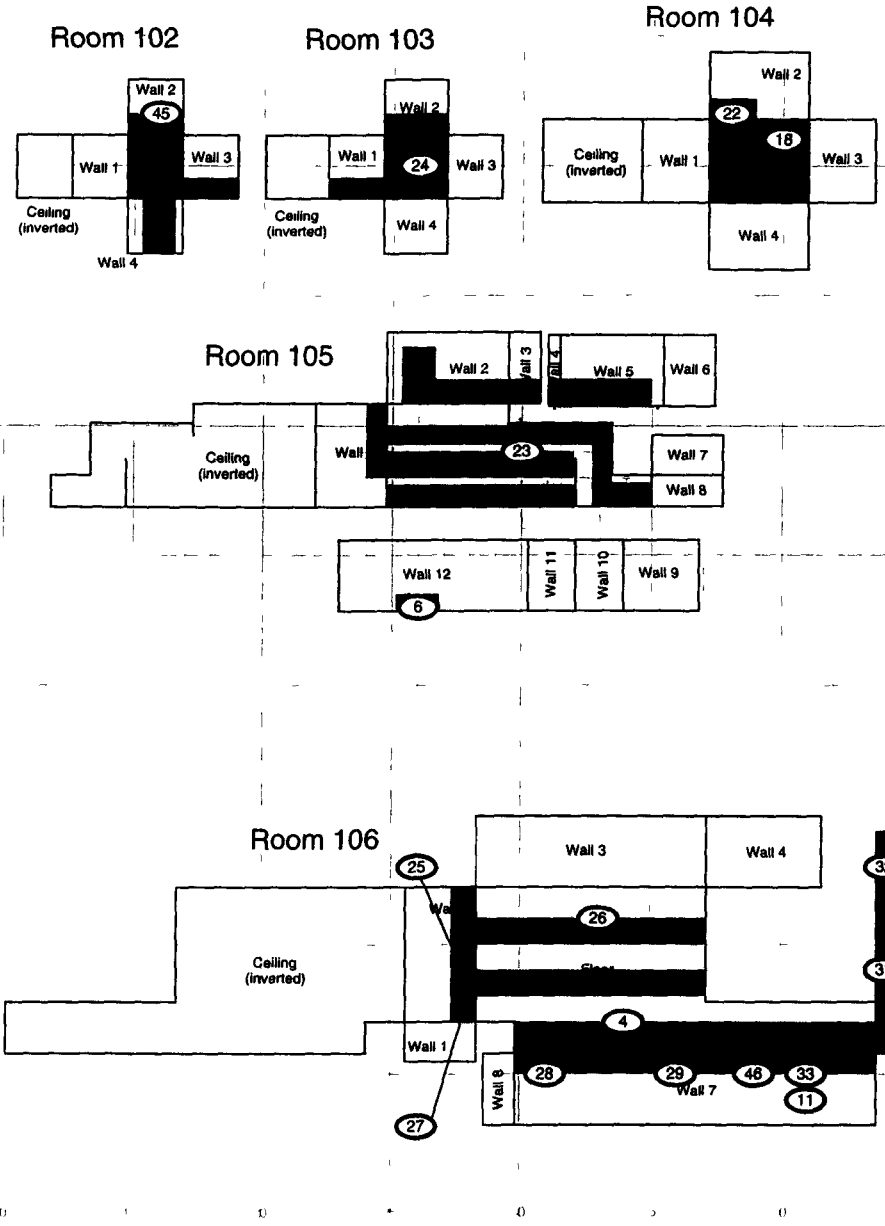
40

PRE-DEMOLITION SURVEY FOR B566A

Survey Area 4 **Survey Unit 566A-4-002** **Classification 3**
Building 566A
Survey Unit Description 566A Interior & Exterior
Total Area 1,462 sq m **Total Floor Area 214 sq m**
Total Roof Area 429 sq m

B566A Interior

Men's Locker



Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30
0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s)
1, 2, 3, 4, 5, 6, 7

U S Department of Energy
Rocky Flats Environmental Technology Site

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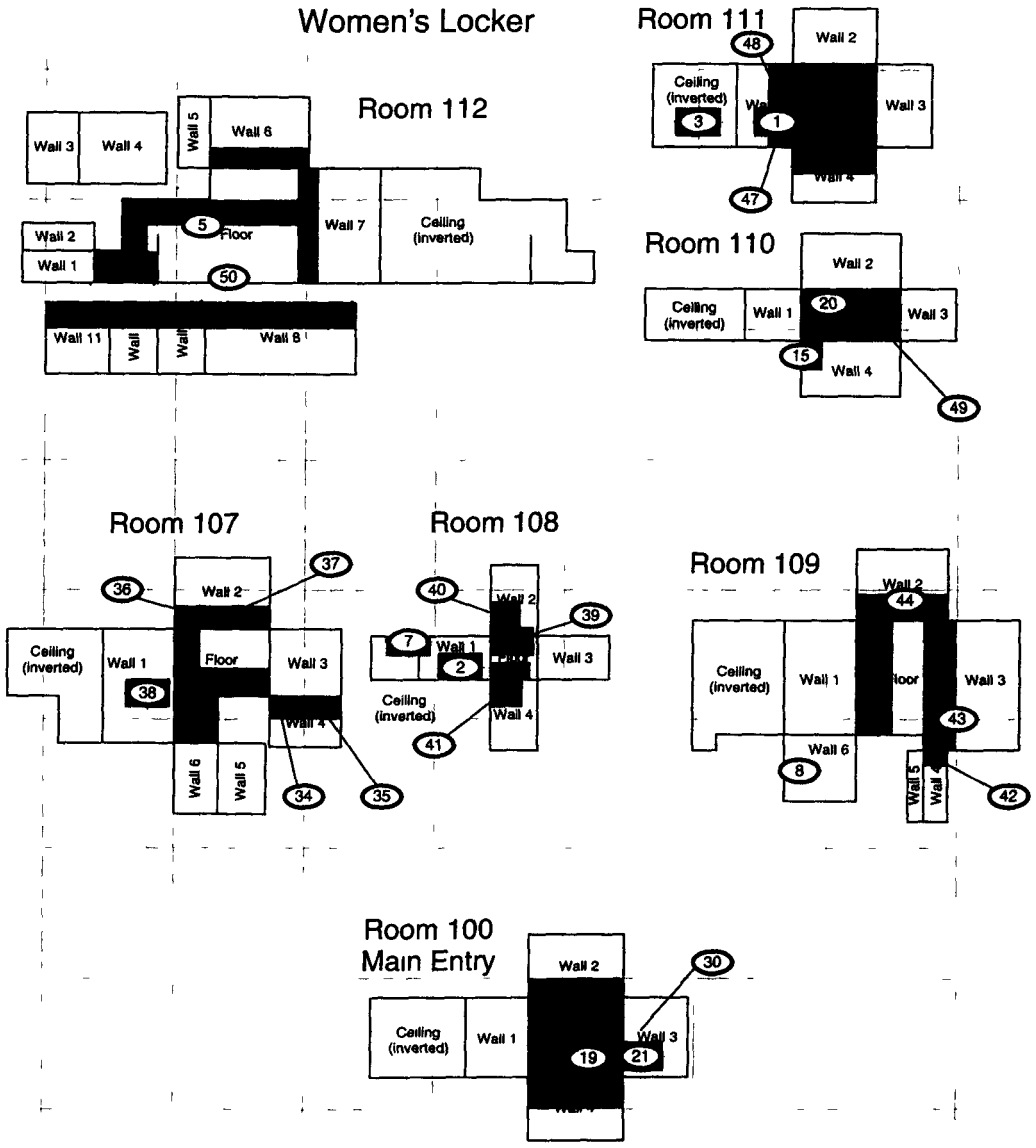
Communications Group

MAP ID 03-0189/B566A-IN1-SC Sept 17, 2003

PRE-DEMOLITION SURVEY FOR B566A

Survey Area 4 **Survey Unit 566-4-002** **Classification 3**
Building 566A
Survey Unit Description 566A Interior & Exterior
Total Area 1,462 sq m **Total Floor Area 214 sq m**
Total Roof Area 429 sq m

B566A Interior



Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30
0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s)
1, 2, 3, 4, 5, 6, 7

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Rocky Flats Environmental Technology Site

Prepared by GIS Dept. 303-966-7707 Prepared for

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Communications Group

MAP ID 03-0189/B566A-IN2-SC Sept 17, 2003

SURVEY UNIT 566-A-003
RADIOLOGICAL DATA SUMMARY - PDS

Survey Unit Description: B566 (Interior)

43

Total Surface Activity Measurements

	69 Number Required	78 Number Obtained	
MIN	15 2		dpm/100 cm^2
MAX	83 5		dpm/100 cm^2
MEAN	9 9		dpm/100 cm^2
STD DEV	17 1		dpm/100 cm^2
TRANSURANIC DCGL$_W$	100		dpm/100 cm^2

Removable Activity Measurements

	69 Number Required	78 Number Obtained	
MIN	0 6		dpm/100 cm^2
MAX	2 7		dpm/100 cm^2
MEAN	0 2		dpm/100 cm^2
STD DEV	1 0		dpm/100 cm^2
TRANSURANIC DCGL$_W$	20		dpm/100 cm^2

44

566-A-003
TSA DATA SUMMARY

Manufacturer	NE Tech	NE Tech	NE Tech	NE Tech	NE Tech
Model	DP-6	DP-6	DP-6	DP-6	DP-6
Instrument ID#	7	10	11	15	25
Serial #	3125	3104	1397	2352	2394
Cal Due Date	3/24/04	3/29/04	4/22/04	5/11/04	3/10/04
Analysis Date	11/20/03	11/24/03	11/24/03	11/25/03	11/25/03
Alpha Eff (c/d)	0 216	0 210	0 190	0 230	0 208
Alpha Bkgd (cpm)	3 2	5 0	2 0	2 0	4 0
Sample Time (min)	1 5	1 5	1 5	1 5	1 5
LAB Time (min)	1 5	1 5	1 5	1 5	1 5
MDC (dpm/100cm^2)	48 0	48 0	48 0	48 0	48 0

Sample Location Number	Instrument ID#	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1,2]
1	15	6 0	26 1	4 7	20 4	7 2
2	15	4 7	20 4	6 7	29 1	1 5
3	11	0 7	3 7	3 3	17 4	15 2
4	15	3 3	14 3	4 0	17 4	-4 6
5	10	4 0	19 0	2 7	12 9	0 1
6	15	2 7	11 7	2 0	8 7	7 2
7	11	6 7	35 3	6 7	35 3	16 3
8	10	4 0	19 0	4 7	22 4	0 1
9	15	8 7	37 8	1 5	6 5	18 9
10	7	9 0	41 7	7 0	32 4	22 7
11	7	8 0	37 0	4 0	18 5	18 1
12	15	1 3	5 7	4 0	17 4	13 3
13	10	4 0	19 0	5 3	25 2	0 1
14	15	6 0	26 1	6 0	26 1	7 2
16	15	6 0	26 1	7 3	31 7	7 2
17	15	4 7	20 4	5 3	23 0	1 5
18	11	8 0	42 1	2 0	10 5	23 2
19	15	6 7	29 1	6 0	26 1	10 2
20	15	2 7	11 7	2 7	11 7	7 2
21	10	7 3	34 8	5 3	25 2	15 8
22	15	6 7	29 1	3 3	14 3	10 2
23	15	4 7	20 4	2 7	11 7	1 5
24	10	4 0	19 0	0 7	3 3	0 1
25	15	7 3	31 7	3 3	14 3	12 8
26	10	2 0	9 5	0 0	0 0	9 4
27	7	7 3	33 8	8 0	37 0	14 9
28	7	3 3	15 3	7 3	33 8	3 7
29	15	12 0	52 2	7 3	31 7	33 2
30	11	3 3	17 4	2 0	10 5	1 6
31	10	4 7	22 4	3 3	15 7	3 5
32	10	5 3	25 2	0 7	3 3	6 3
33	10	3 3	15 7	2 0	9 5	3 2
34	11	7 3	38 4	3 3	17 4	19 5
35	10	14 7	70 0	2 0	9 5	51 1
36	10	6 7	31 9	4 0	19 0	13 0
37	10	5 3	25 2	4 7	22 4	6 3
38	11	8 7	45 8	2 0	10 5	26 9
39	11	4 0	21 1	6 0	31 6	2 1
40	10	1 3	6 2	2 0	9 5	12 7
41	10	4 7	22 4	0 0	0 0	3 5
42	10	4 0	19 0	2 7	12 9	0 1
43	10	2 7	12 9	2 0	9 5	-6 1
44	11	6 0	31 6	5 3	27 9	12 6
45	11	8 7	45 8	6 7	35 3	26 9

45

566-A-003
TSA DATA SUMMARY

Sample Location Number	Instrument ID#	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1,2]
46	10	10 7	51 0	5 3	25 2	32 0
47	11	11 3	59 5	4 7	24 7	40 5
48	11	8 0	42 1	6 7	35 3	23 2
49	10	12 0	57 1	2 7	12 9	38 2
50	11	5 3	27 9	6 7	35 3	9 0
51	10	4 7	22 4	3 3	15 7	3 5
52	11	1 3	6 8	6 7	35 3	12 1
53	11	3 3	17 4	5 3	27 9	-1 6
54	10	2 7	12 9	2 0	9 5	6 1
55	11	8 0	42 1	2 0	10 5	23 2
56	11	5 3	27 9	6 0	31 6	9 0
57	10	6 0	28 6	4 0	19 0	9 6
58	11	5 3	27 9	3 3	17 4	9 0
59	10	7 3	34 8	2 0	9 5	15 8
60	11	3 3	17 4	7 3	38 4	1 6
61	11	5 3	27 9	4 0	21 1	9 0
62	11	4 7	24 7	4 0	21 1	5 8
63	11	6 0	31 6	4 7	24 7	12 6
64	10	9 3	44 3	5 3	25 2	25 4
65	10	2 0	9 5	2 0	9 5	9 4
66	11	6 7	35 3	4 7	24 7	16 3
67	11	10 7	56 3	3 3	17 4	37 4
68	10	4 0	19 0	4 7	22 4	0 1
69	10	4 0	19 0	3 3	15 7	0 1
70	25	6 0	28 8	3 3	15 9	9 9
71	25	4 7	22 6	2 0	9 6	3 7
72	25	5 3	25 5	2 0	9 6	6 6
73	25	21 3	102 4	4 7	22 6	83 5
74	25	2 7	13 0	3 3	15 9	-5 9
75	25	4 7	22 6	3 3	15 9	3 7
76	25	3 3	15 9	2 7	13 0	-3 1
77	25	2 0	9 6	2 7	13 0	9 3
78	25	7 3	35 1	1 3	6 3	16 2
79	25	17 3	83 2	3 3	15 9	64 2
					18 9	Sample LAB Average
					MIN	-15 2
					MAX	83 5
					MEAN	9 9
					SD	17 1
					Transuranic $DCGL_W$	100

1 Average LAB used to subtract from Gross Sample Activity

2 Location 15 not collected because the wall was removed

3 Locations 70 through 79 were taken inside the plenums

QC Measurements

67 QC	10	16 7	79 5	2 0	9 5	65 9
59 QC	11	6 7	35 3	2 0	10 5	21 6
49 QC	11	4 7	24 7	4 7	24 7	11 1
32 QC	11	3 3	17 4	3 3	17 4	3 7
38 QC	10	6 7	31 9	1 3	6 2	18 2
					13 7	13 7
					MIN	3 7
					MAX	65 9
					MEAN	24 1
					Transuranic $DCGL_W$	100

1 Average QC LAB used to subtract from Gross Sample Activity

46

566-A-003
RSC - DATA SUMMARY

Manufacturer	Eberline	Eberline	Eberline
Model	SAC-4	SAC-4	SAC-4
Instrument ID#	18	19	20
Serial #	952	966	984
Cal Due Date	1/10/04	4/23/04	1/1/04
Analysis Date	11/26/03	11/26/03	11/26/03
Alpha Eff (c/d)	0 33	0 33	0 33
Alpha Bkgd (cpm)	0 2	0 2	0 1
Sample Time (min)	2	2	2
Bkgd Time (min)	10	10	10
MDC (dpm/100cm^2)	9 0	9 0	9 0

Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm^2)
1	18	2	2 4
2	19	0	-0 6
3	20	0	-0 3
4	18	0	-0 6
5	19	1	0 9
6	20	0	-0 3
7	18	0	-0 6
8	19	0	-0 6
9	20	0	-0 3
10	18	1	0 9
11	19	0	-0 6
12	20	0	-0 3
13	18	1	0 9
14	19	0	-0 6
16	18	0	-0 6
17	19	0	-0 6
18	20	1	1 2
19	18	0	-0 6
20	19	0	-0 6
21	20	0	-0 3
22	18	0	-0 6
23	19	1	0 9
24	20	1	1 2
25	18	1	0 9
26	19	0	-0 6
27	20	1	1 2
28	18	1	0 9
29	19	2	2 4
30	20	2	2 7
31	18	0	-0 6
32	19	0	-0 6
33	20	0	-0 3
34	18	0	-0 6
35	19	1	0 9
36	20	1	1 2
37	18	0	-0 6
38	19	0	-0 6
39	20	2	2 7

47

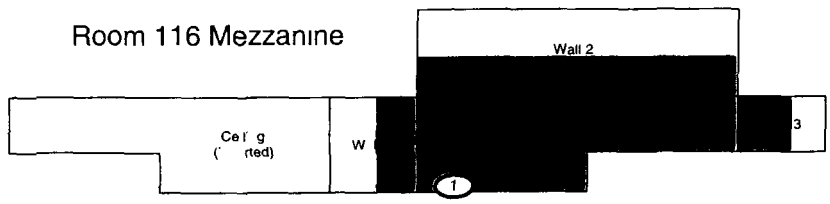
566-A-003
RSC - DATA SUMMARY

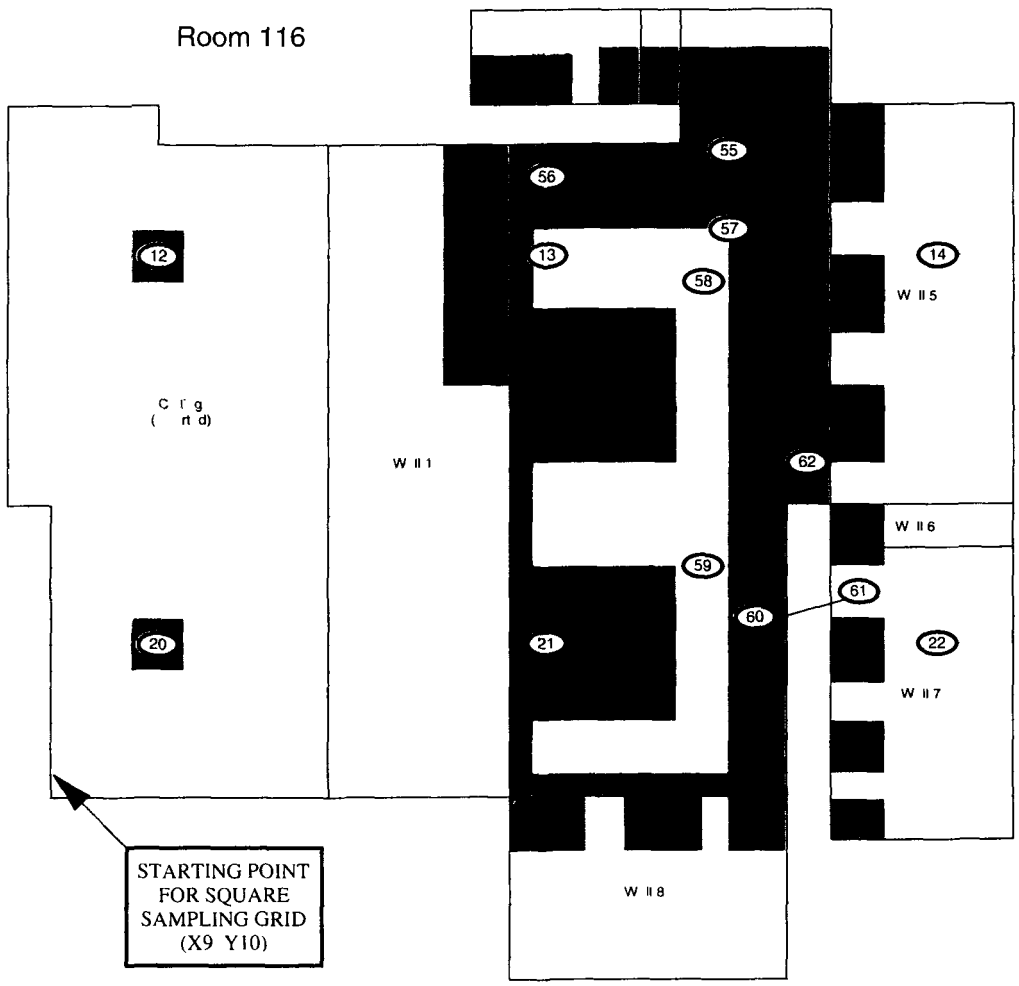
Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm^2)
40	18	1	0 9
41	19	0	-0 6
42	20	0	-0 3
43	18	1	0 9
44	19	2	2 4
45	20	0	-0 3
46	18	0	-0 6
47	19	0	-0 6
48	20	1	1 2
49	18	1	0 9
50	19	0	-0 6
51	20	1	1 2
52	18	0	-0 6
53	19	0	-0 6
54	20	1	1 2
55	18	0	-0 6
56	19	1	0 9
57	20	0	-0 3
58	18	0	-0 6
59	19	0	-0 6
60	20	0	-0 3
61	18	1	0 9
62	19	0	-0 6
63	20	0	-0 3
64	18	1	0 9
65	19	0	-0 6
66	20	0	-0 3
67	18	0	-0 6
68	19	0	-0 6
69	20	0	-0 3
70	18	2	2 4
71	19	0	-0 6
72	20	0	-0 3
73	18	0	-0 6
74	19	1	0 9
75	20	0	-0 3
76	18	1	0 9
77	19	0	-0 6
78	20	0	-0 3
79	18	0	-0 6
		MIN	-0 6
		MAX	2 7
		MEAN	0 2
		SD	1 0
		Transuranic $DCGL_W$	**20**

PRE DEMOLITION SURVEY FOR B566

Survey Area 4 **Survey Unit** 566 4-003 **Classification** 2
Building 566
Survey Unit Description 566 Interior
Total Area 6 337 sq m **Total Floor Area** 1 788 sq m
Grid Spacing for Survey Points 15m X 15m

B566 Interior





Scan Area

SURVEY MAP LEGEND

- Survey & TSA Location
- Smear TSA & Sample Location
- Open/Inaccessible Area
- Area Another Survey Unit

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N

0 FEET 30
0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by GIS Dept 303-966-7707 Prepared for:

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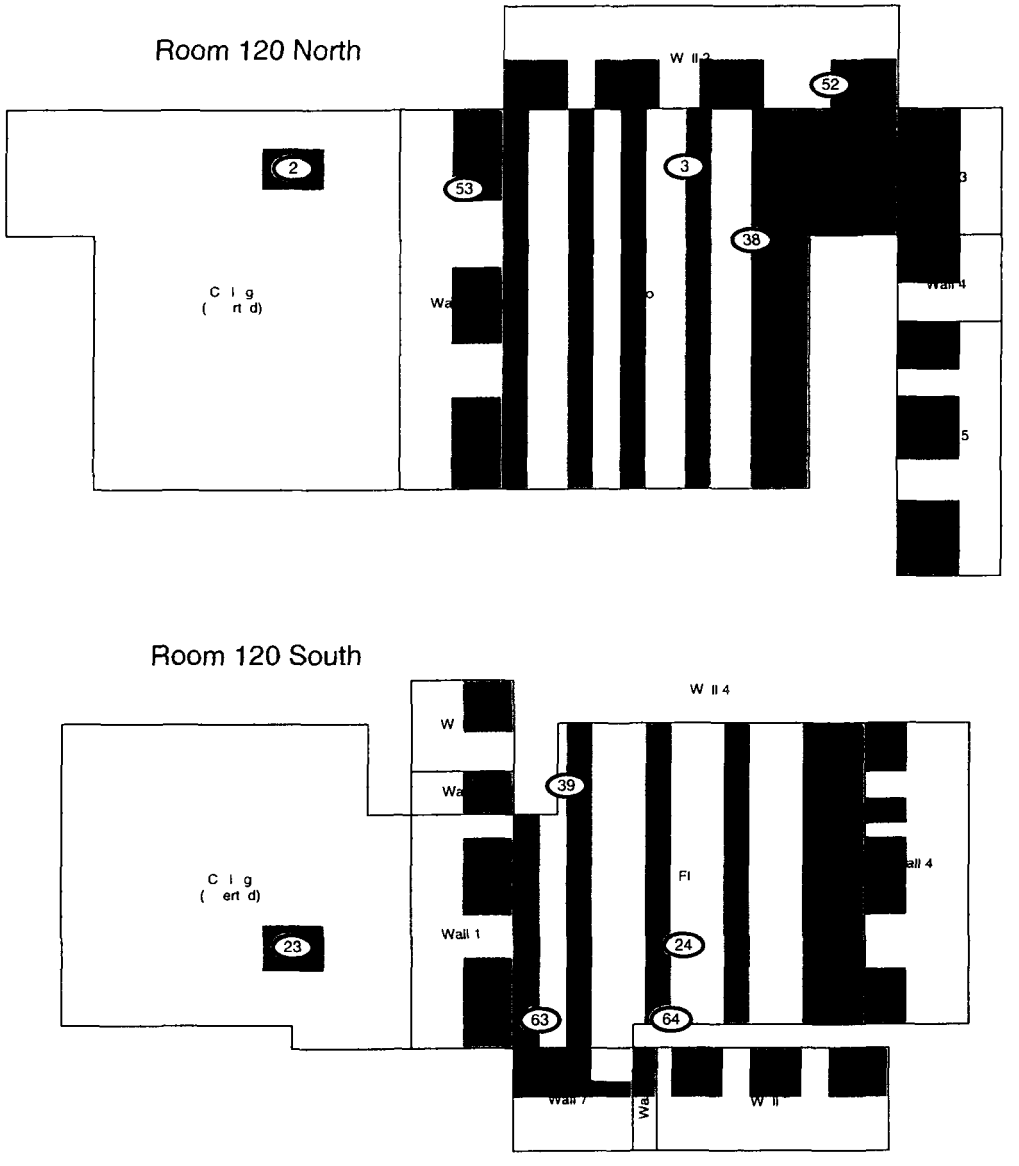
Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s)
1 6 8 9 12 14 16 17 21 24

MAP ID 03-0189/B566-IN1 SC Nov 26 2003

PRE DEMOLITION SURVEY FOR B566

Survey Area 4 **Survey Unit** 566 4 003 **Classification** 2
Building 566
Survey Unit Description 566 Interior
Total Area 6 337 sq m **Total Floor Area** 1 788 sq m
Grid Spacing for Survey Points 15m X 15m

B566 Interior



Scan Area

SURVEY MAP LEGEND

- S near & TSA Loc t on
- Smear TSA & Sample Location
- Open/I acce sible Ar
- Area in Another Surv y Un t

N her he U d S G rnm K se H lI C Dv C rp I&LT y g v here f any f h pl v es m kes any arra v press mpl d m v l ol l b l y re po b l y f h cura v omplet ne sef line f y f m ppar us prod pre ss d scl sed. ep eve h se w ld not f g p lv d gh

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s)
1 6 8 9 12 14 16 17 21 24

0 FEET 30
0 METERS 10
1 nch = 24 feet 1 gr d sq = 1 sq m

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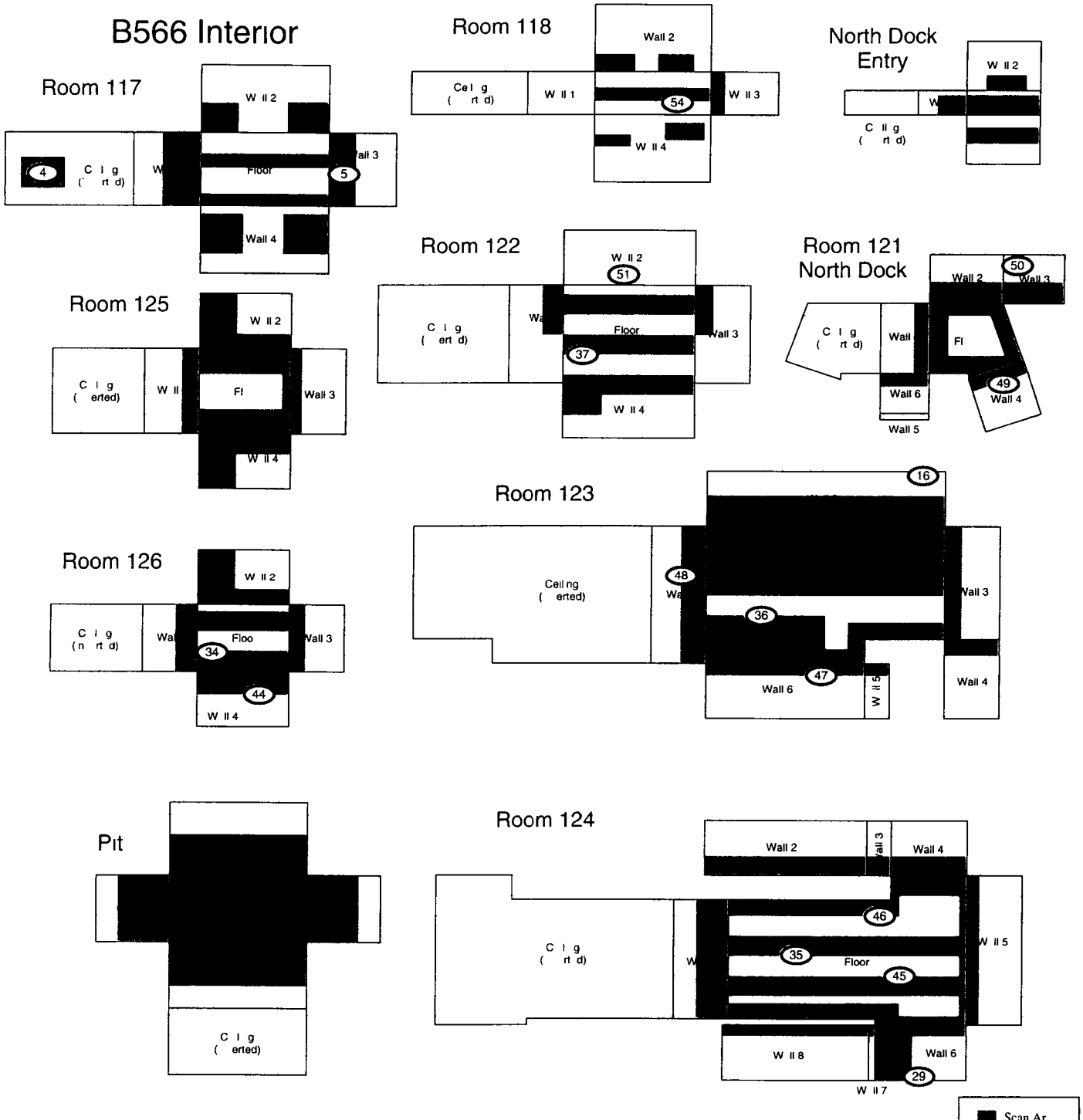
KAISER HILL
MAP ID 03 0189/B566-IN2 SC Nov 26 2003

PRE DEMOLITION SURVEY FOR B566

Survey Area 4 **Survey Unit 566 4-003** **Classification 2**
Building 566
Survey Unit Description 566 Interior
Total Area 6 337 sq m **Total Floor Area 1 788 sq m**
Grid Spacing for Survey Points 15m X 15m

B566 Interior



Scan Ar

SURVEY MAP LEGEND

- Sm & TSA Loc t n
- Sm ar TS A & S pl Loc t n
- Open/In cce sible Area
- Area n Anoth r Survey Unit

N her h L d S G m K se H IC Dy C rp l&LT v g y h et f v f h mpl ves kes any rra p pled m y l gall bl y re pe bl v f h ura v ompl se' ine f v f m ppara us p oduc p ss d s l ved ep ese h se w ld no f g p ly d gh

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s)
1 6 8 9 12 14 16 17 21 24

N

0 FEET 30
0 METERS 10

1 nch = 4 fe t 1 grid q 1 q m

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Rocky Flats Environmental Technology Site

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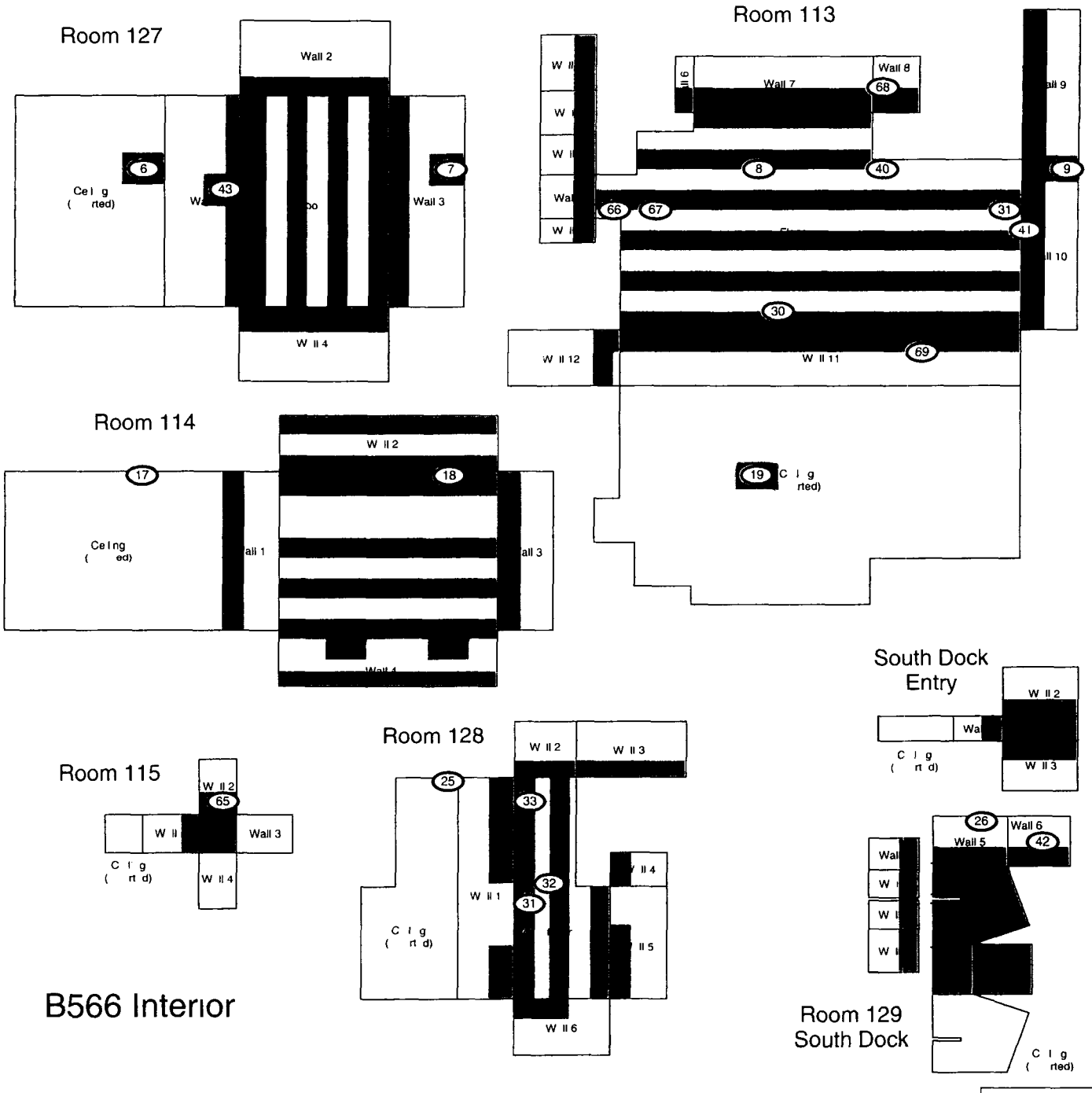
MAP ID 03-0189/B566-IN3 SC **Nov 26 2003**

5/

PRE DEMOLITION SURVEY FOR B566

Survey Area 4 **Survey Unit 566 4-003** **Classification 2**
Building 566
Survey Unit Description 566 Interior
Total Area 6 337 sq m **Total Floor Area 1 788 sq m**
Grid Spacing for Survey Points 15m X 15m



Sc n Arc

SURVEY MAP LEGEND

- Smear & TSA Locat on
- Smear TSA & S mple Loc t on
- Open/Inaccessible Area
- Area in Anoth r Sur ey Unit

N her h U d S G mm K se H ll C Dv C rp l&LT v g nev here f or any f h ol vee m kes any rra v pre mpl d m y l gal l bl y pt bl v h y ompl ss sef lne f v f rm ppar us p d proc ss d sel sed ep eve h use ld no f g p ly d gh

N

0 FLET 30
0 METERS 10

I nch = 24 feet I orid q = I q m

U S Department of Energy
Rocky Flats Environmental Technology Site

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Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s)
1 6 8 9 12 14 16 17 21 24

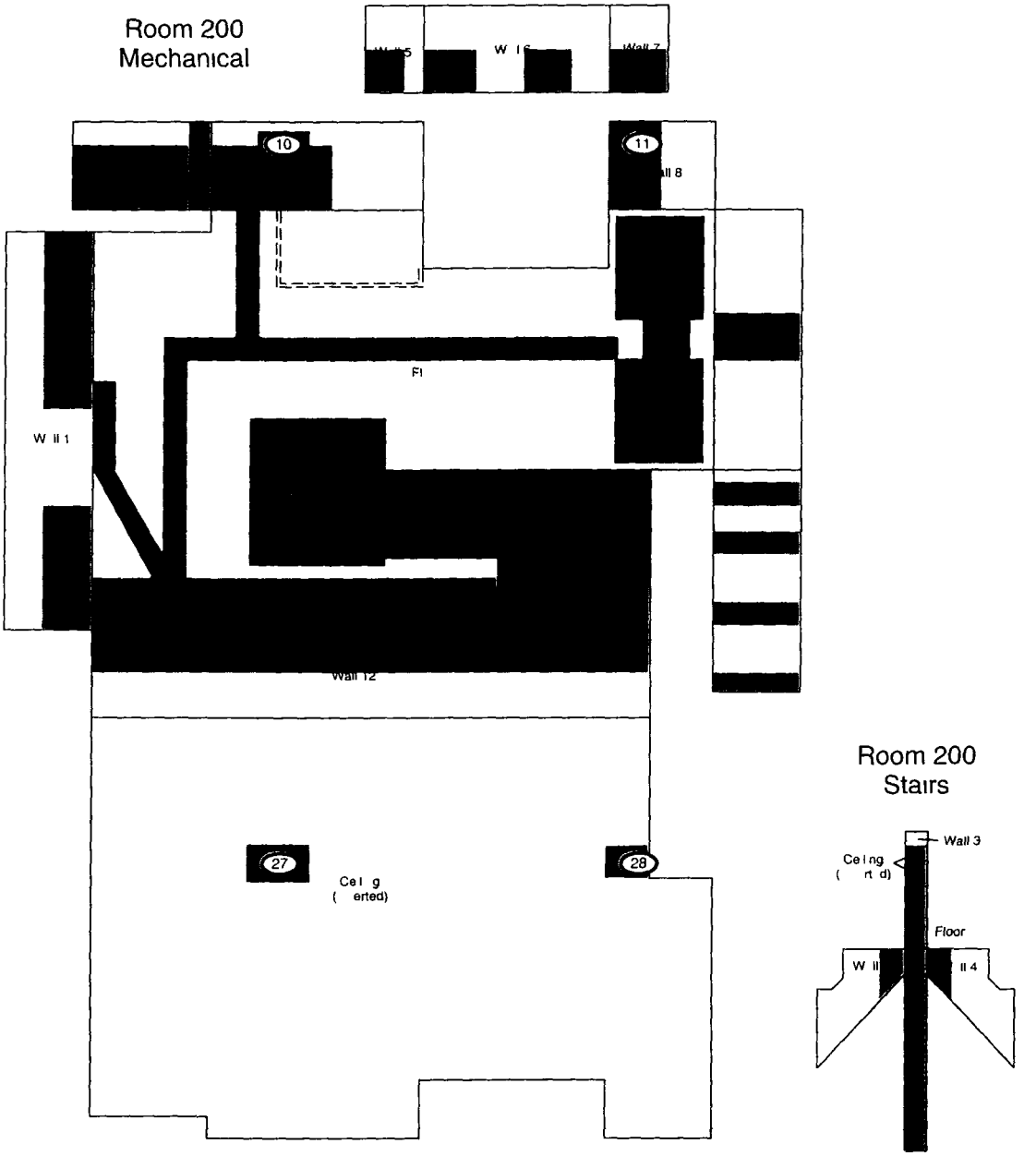
MAP ID 03-0189/B566-IN4-SC **Nov 26 2003**

52

PRE DEMOLITION SURVEY FOR B566

Survey Area 4 **Survey Unit 566 4-003** **Classification 2**
Building 566
Survey Unit Description 566 Interior
Total Area 6 337 sq m **Total Floor Area 1 788 sq m**
Grid Spacing for Survey Points 15m X 15m

B566 Second Floor Interior



Sc n A e

SURVEY MAP LEGEND

- Sn ar & TSA Locat on
- Sm ar TSA & Sampl Locati n
- Open/In ccess ble A a
- Area in Anoth r Surv y Unit

N her h U d S G m K se H lC Dy C rp l&LT v g y hereof any f he pl s kes anv rr y pres pl d m v f gal f b l y re p b l ty h ra v ompl e' Inc f v f m l ppar us produ proc d sc ed, ep ese h se Id no f g p lv d gh

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s)
1 6 8 9 12 14 16 17 21 24

0 FEET 30
0 METERS 10

I nch = 24 feet I orid sq = I q n

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MAP ID 03-0189/B566-IN5 SC **Dec 1 2003**

BLDG. 559 SURVEY LOG # 559-11-03-3950

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

MFG EBERLINE	MFG EBERLINE	MFG N E TECH
MODEL SAC-4	MODEL BC-4	MODEL ELECTRA
SERIAL # 1274	SERIAL # 266	SERIAL # 3121
CAL DUE 3-3-04	CAL DUE 7-29-04	CAL DUE 12-5-03
BKG 0.2 cpm	BKG 47.4 cpm	BKG 748 cpm
EFFICIENCY 33%	EFFICIENCY 25%	EFFICIENCY 33%
MDA 20 dpm	MDA 200 dpm	MDA BETA 455 dpm
MFG NA	MFG NA	MFG N E TECH
MODEL	MODEL	MODEL ELECTRA
SERIAL #	SERIAL #	SERIAL # 3121
CAL DUE	CAL DUE	CAL DUE 12-5-03
BKG	BKG	BKG 2.0 cpm
EFFICIENCY	EFFICIENCY	EFFICIENCY 17%
MDA NA	MDA NA	MDA ALPHA 94 dpm

Survey Type: ALPHA / BETA

Building #566 ~~559~~

Location TRENCH

Purpose fixed + removable

RWP # 03-559-5012

Date 11-11-03 Time 1400

RCT Jerry Locke [redacted]
Print Name Signature

RCT S Clinger S Clinger [redacted]
Print Name Signature

PRN/REN #

Comments Survey of TRENCH in Bldg 566 ∝ + β

100% SCAN

	ALPHA			BETA		
	DPM REMOVEABLE (WIPE)	DPM DIRECT	DPM/100CM² (SWIPE) REMOVEABLE	DPM REMOVEABLE (WIPE)	DPM DIRECT	DPM/100CM² (SWIPE) REMOVEABLE
1	<94	<94	<20	<455	<455	<200
2	<94	300	<20	<455	3000	<200
3	<94	180	<20	<455	<455	<200
4	<94	300	<20	<455	<455	<200
5	<94	138	<20	<455	<455	<200
6	<94	300	<20	<455	<455	<200
7	<94	300	<20	<455	<455	<200
8	<94	150	<20	<455	<455	<200
9	<94	600	<20	<455	<455	<200
10	<94	600	<20	<455	<455	<200
11	<94	1800	<20	<455	<455	<200
12	<94	1800	<20	<455	<455	<200
13	<94	2200	60	<455	<455	<200
14	<94	900	<20	<455	<455	<200
15	<94	150	<20	<455	<455	<200
16	<94	<94	<20	<455	<455	<200
17	<94	<94	<20	<455	<455	<200
18	<94	<94	<20	<455	<455	<200
19	<94	<94	<20	<455	<455	<200
20	<94	<94	<20	<455	<455	<200
21	<94	<94	<20	<455	<455	<200
22	<94	<94	<20	<455	<455	<200
23	<94	<94	<20	<455	<455	<200
24	<94	<94	<20	<455	<455	<200
25	<94	<94	<20	<455	<455	<200

DUPLICATE

Date Reviewed 11/11/03 RS Supervision ARTscalida [redacted]
Print Name Signature

ATTACHMENT C

Building 566 Process Waste Tank Sludge Sample Results

CANBERRA

Page 1 of 2

~~Page 10 of 11~~

Analysis Results Header 11/14/2003 2 48 22 PM Page 1

****
***** GAMMA SPECTRUM ANALYSIS *****
** Canberra Mobile Laboratory Services **
****

Report Generated On 11/14/2003 2 48 22 PM

RIN Number 04S0054
Analytical Batch ID 0311144467
Line Item Code RC10C102

Filename S \GENIE2K\CAMFILES\LI004(C)\MOD\C0200033 CNF

Sample Number 04S0054-004 001
Lab Sample Number CMLS-4039
Sample Receipt Date 11/14/2003
Sample Volume Received 1 34E+003 Gram

Result Identifier N/A

Peak Locate Threshold 2 50
Peak Locate Range (in channels) 100 - 8192
Peak Area Range (in channels) 100 - 8192
Identification Energy Tolerance 1 000 keV

Sample (Final Aliquot Size) 1 342E+003 Gram
Sample Quantity Error 0 000E+000
Systematic Error Applied 0 000E+000

Sample Taken On 11/14/2003 10 30 00 AM
Acquisition Started 11/14/2003 1 35 36 PM

Count Time 3600 0 seconds
Real Time 3600 3 seconds
Dead Time 0 01 %

566 Process Waste Tank Sludge Sample Results. Both samples were composited into one count.

Energy Calibration Used Done On 10/1/03
Energy = 0 197 + 0 250*ch + -2 99E-009*ch^2 + 0 00E+000*ch^3

Corrections Applied
None

Efficiency Calibration Used Done On 11/14/03
Efficiency Geometry ID 04S0054-004 001

Analyzed By Phil Sanderson Date 11/14/03

Reviewed By Sheri Chambers Date 11/14/03

57

****
***** Sample and QC Sample Results Summary *****
****

Site Sample ID 04S0054-004 001

Analytical Batch ID 0311144467

Sample Type (Result Identifier) C02

Lab Sample Number CMLS-4039

Geometry ID 04S0054-004 001

Filename S \GENIE2K\CAMFILES\LI004(C)\MOD\C0200033 CNF

Detector Name LEGE

MDA = Curie method as specified in Genie-2000 Customization Tools Manual Appendix B, Basic Algorithms

Analyte	Activity (pCi/Gram)	2-Sigma Uncertainty (pCi/Gram)	MDA (pCi/Gram)
K-40n	2 06E+000	5 59E-001	1 07E-001
CS-137n	0 00E+000	0 00E+000	6 24E-002
TL-208n	3 14E-002	1 87E-002	3 74E-002
PO-210in	0 00E+000	0 00E+000	5 26E+003
BI-212n	0 00E+000	0 00E+000	7 85E-001
PB-212n	4 84E-002	2 11E-002	3 93E-002
BI-214n	9 33E-002	5 30E-002	7 16E-002
PB-214n	6 93E-002	3 29E-002	6 53E-002
RA-226n	4 16E-001	3 16E-001	5 08E-001
AC-228n	0 00E+000	0 00E+000	2 68E-001
TH-230n	0 00E+000	0 00E+000	8 07E+000
Th 231n	0 00E+000	0 00E+000	3 36E-001
PA-234Mn	0 00E+000	0 00E+000	7 35E+000
PA-234n	0 00E+000	0 00E+000	9 24E-002
U-235	0 00E+000	0 00E+000	3 14E-002
U238/234	1 49E+000	8 94E-001	4 67E-001
AM-241	2 44E+000	1 65E-001	1 36E-001

i - If Po-210 is detected in the spectrum, this peak may be the result of the interaction of Pb-206(n,n') which also produces a prompt gamma at 803 keV

n - Non-contractual Nuclide

ATTACHMENT D

Chemical Data Summaries and Sample Maps

Asbestos Data Summary

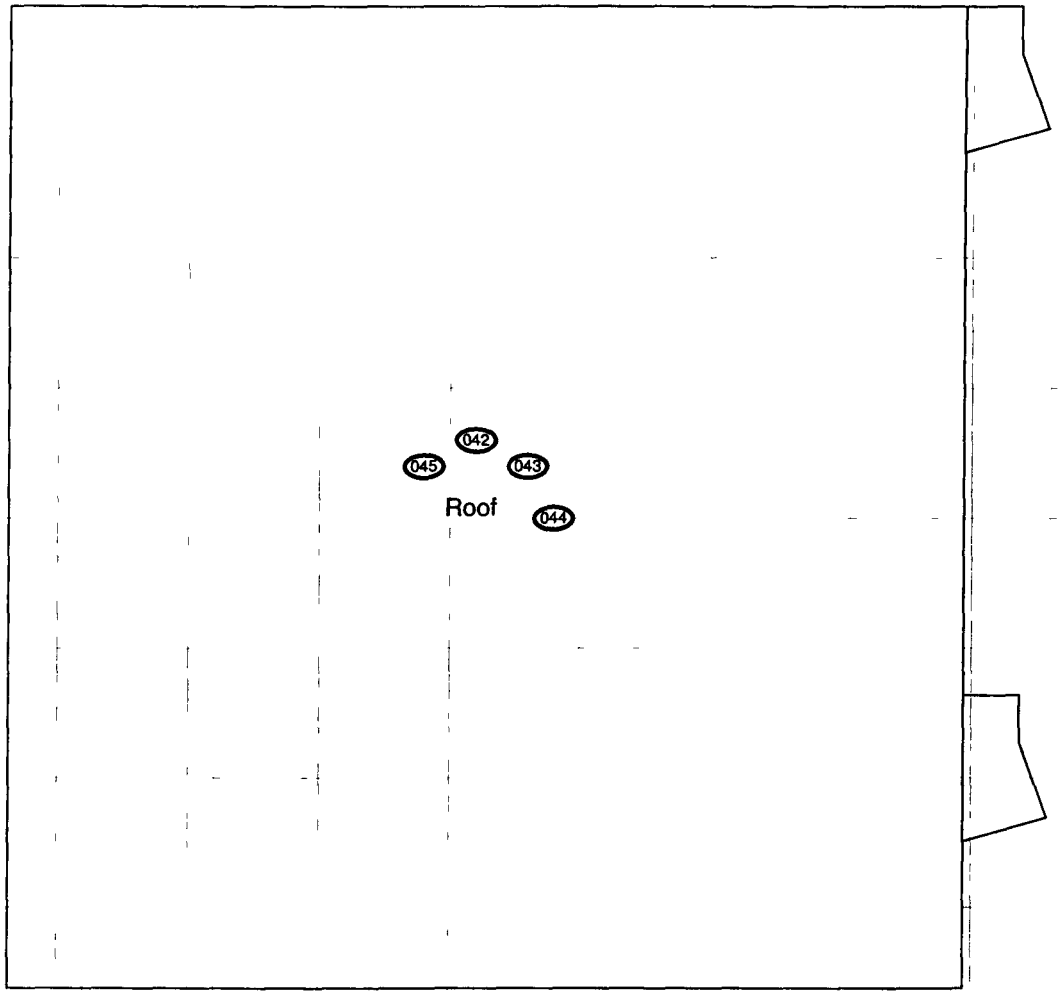
Sample Number	Map Location Point	Room	Material Sampled & Location	Analytical Results
Building 566A– RIN03Z2218				
566-08202003-214-001	001	100	Tan floor tile with specks and mastic	None Detected
566-08202003-214-003	003	100	Tan base cove and mastic	None Detected
566-08202003-214-005	005	105	Grey floor tile with specks and mastic	None Detected
566-08202003-214-006	006	105	Grey floor tile with specks and mastic	None Detected
566-08202003-214-007	007	105	Grey base cove and mastic	None Detected
566-08202003-214-008	008	105	Grey base cove and mastic	None Detected
566-08202003-214-015	015	112	Pink floor tile with gray specks and mastic	None Detected
566-08202003-214-016	016	112	Pink floor tile with gray specks and mastic	None Detected
566-08202003-214-017	017	112	Light pink Drywall and mud	None Detected
566-08202003-214-018	018	105	Light blue drywall and mud	None Detected
566-08202003-214-020	020	105	Skim coat on cinderblock	None Detected
566-08202003-214-021	021	106	Skim coat on cinderblock	None Detected
566-08202003-214-027	027	107	White drywall and mud	None Detected
566-08202003-214-028	028	107	White drywall and mud	None Detected
Building 566– RIN03Z2218				
566-08202003-214-002	002	113	Tan floor tile with specks and mastic	None Detected
566-08202003-214-004	004	113	Tan base cove and mastic	None Detected
566-08202003-214-009	009	113	Ceiling tile with small white specks	None Detected
566-08202003-214-010	010	113	Ceiling tile with small white specks	None Detected
566-08202003-214-011	011	113	Ceiling tile tan pin hole	None Detected
566-08202003-214-012	012	113	Ceiling tile with large white grooves	None Detected
566-08202003-214-013	013	113	Ceiling tile white smooth, no holes	None Detected
566-08202003-214-014	014	113	Ceiling tile white plastic coatings	None Detected
566-08202003-214-019	019	120	White drywall and mud	None Detected
566-08202003-214-022	022	113	Skim coat on cinderblock	None Detected
566-08202003-214-023	023	116	Skim coat on cinderblock	None Detected
566-08202003-214-024	024	120	Skim coat on cinderblock	None Detected
566-08202003-214-025	025	122	Skim coat on cinderblock	None Detected
566-08202003-214-026	026	123	Skim coat on cinderblock	None Detected
566-08202003-214-029	029	200	TSI, heating water return	None Detected
566-08202003-214-030	030	200	TSI, Brine Supply	None Detected
Building 566 – RIN03Z2218				
566-08202003-214-031	031	200	TSI wrap, white cover @ SFI 15	None Detected
566-08202003-214-032	032	200	TSI wrap, white cover @ SFI 107	None Detected
566-08202003-214-033	033	200	TSI wrap, white cover, heating water supply	None Detected

Asbestos Data Summary				
Sample Number	Map Location Point	Room	Material Sampled & Location	Analytical Results
566-08202003-214-034	034	200	TSI black tar wrap, process waste	None Detected
566-08202003-214-035	035	200	TSI black tar wrap, process waste	None Detected
566-08202003-214-036	036	200	TSI black tar wrap, process waste	None Detected
566-08202003-214-037	037	200	TSI wrap, 30lb steam line	None Detected
566-08202003-214-038	038	200	TSI, abandoned line	None Detected
566-08202003-214-039	039	200	TSI, abandoned line	None Detected
566-08202003-214-040	040	200	TSI condensate	None Detected
566-08202003-214-041	041	200	TSI, 125lb line	None Detected
566-08202003-214-042	042	Roof	Flashing, black and silver paint	None Detected
566-08202003-214-043	043	Roof	Flashing, black and silver paint	None Detected
566-08202003-214-044	044	Roof	Roof Area, black and silver paint	None Detected
566-08202003-214-045	045	Roof	Roof Area, black and silver paint	None Detected
566-08202003-214-046	046	120	Pipe caulking	None Detected
566-08202003-214-047	047	120	Pipe caulking	None Detected
566-08202003-214-048	048	123	TSI elbow, cold water	None Detected
566-08202003-214-049	049	123	TSI elbow, process hot water	None Detected

CHEMICAL SAMPLE MAP

Building 566 Interior & Exterior
Asbestos

B566 Exterior



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30

0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by GIS Dept. 303-966-7707

Prepared for:

CH2MHILL
Communications Group

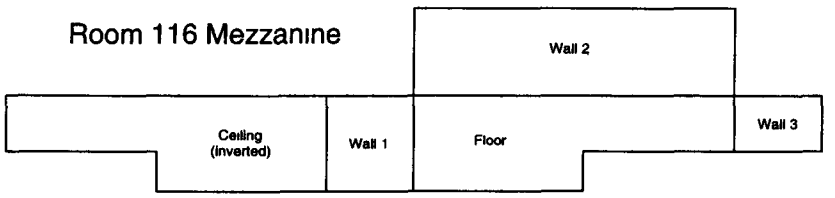
MAP ID 03-0189/B566-EX1-ASB Nov 24, 2003

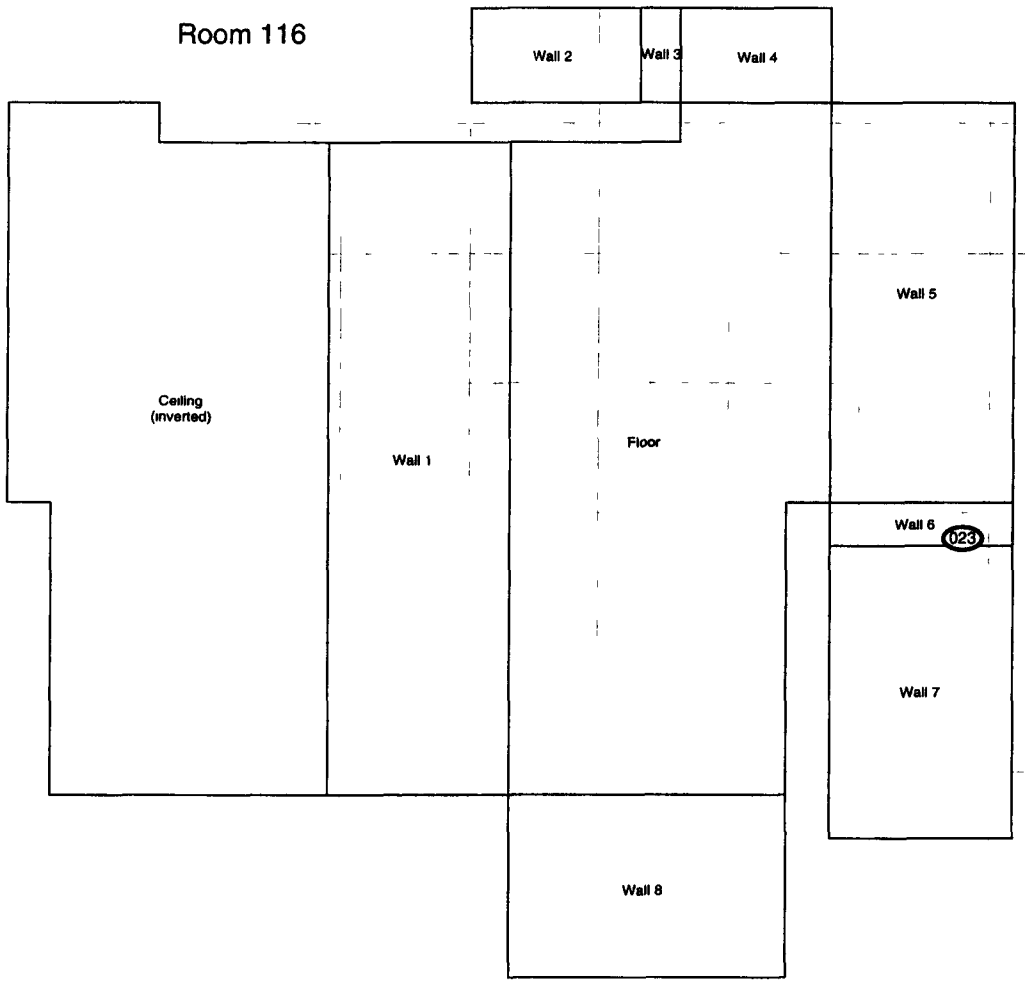
62

CHEMICAL SAMPLE MAP

Building 566 Interior & Exterior
Asbestos

B566 Interior





SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30

0 METERS 10

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Communications Group

Prepared for

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Nov 24, 2003

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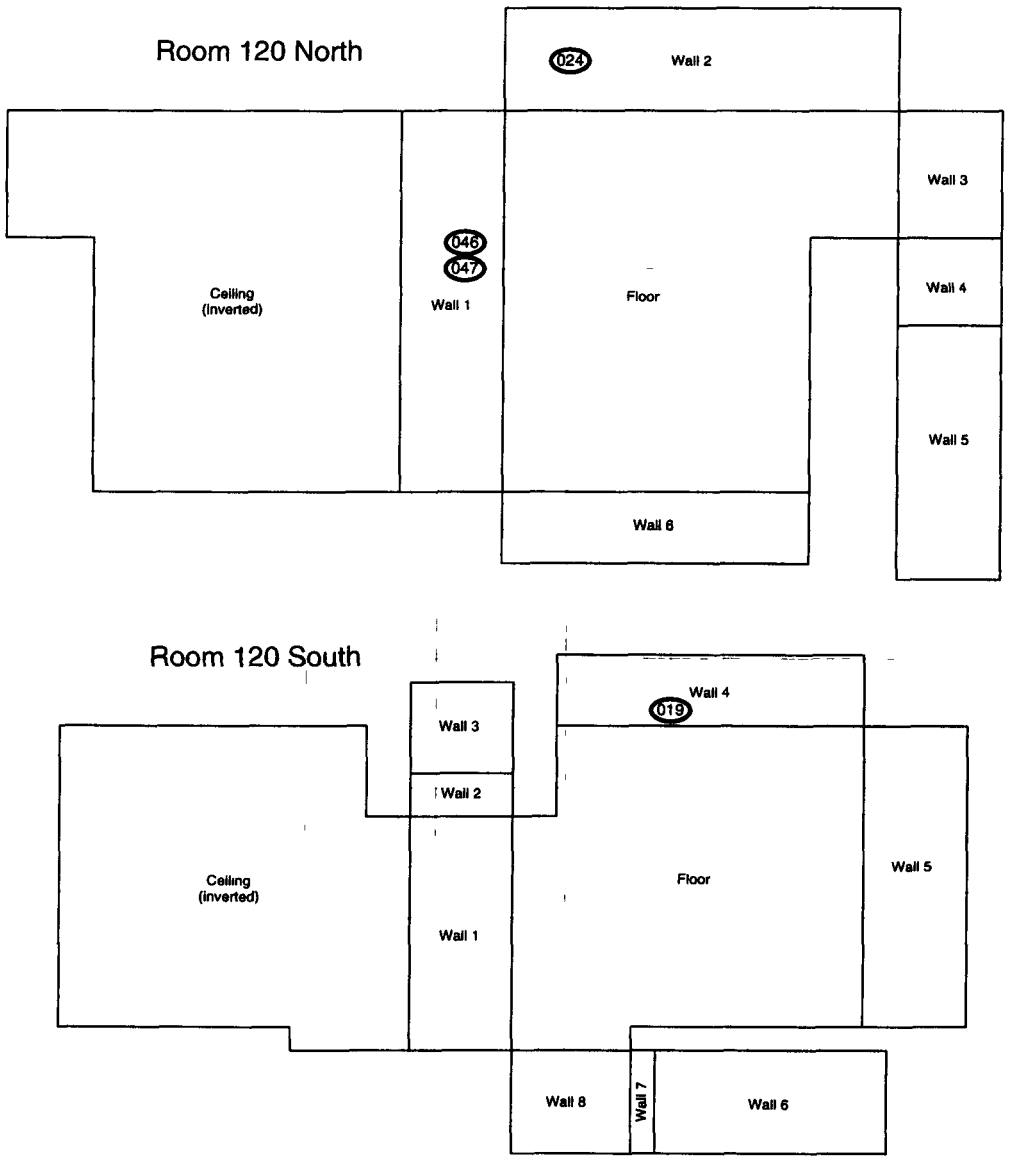
CHEMICAL SAMPLE MAP

Building 566 Interior & Exterrior
Asbestos

B566 Interior



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30

0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

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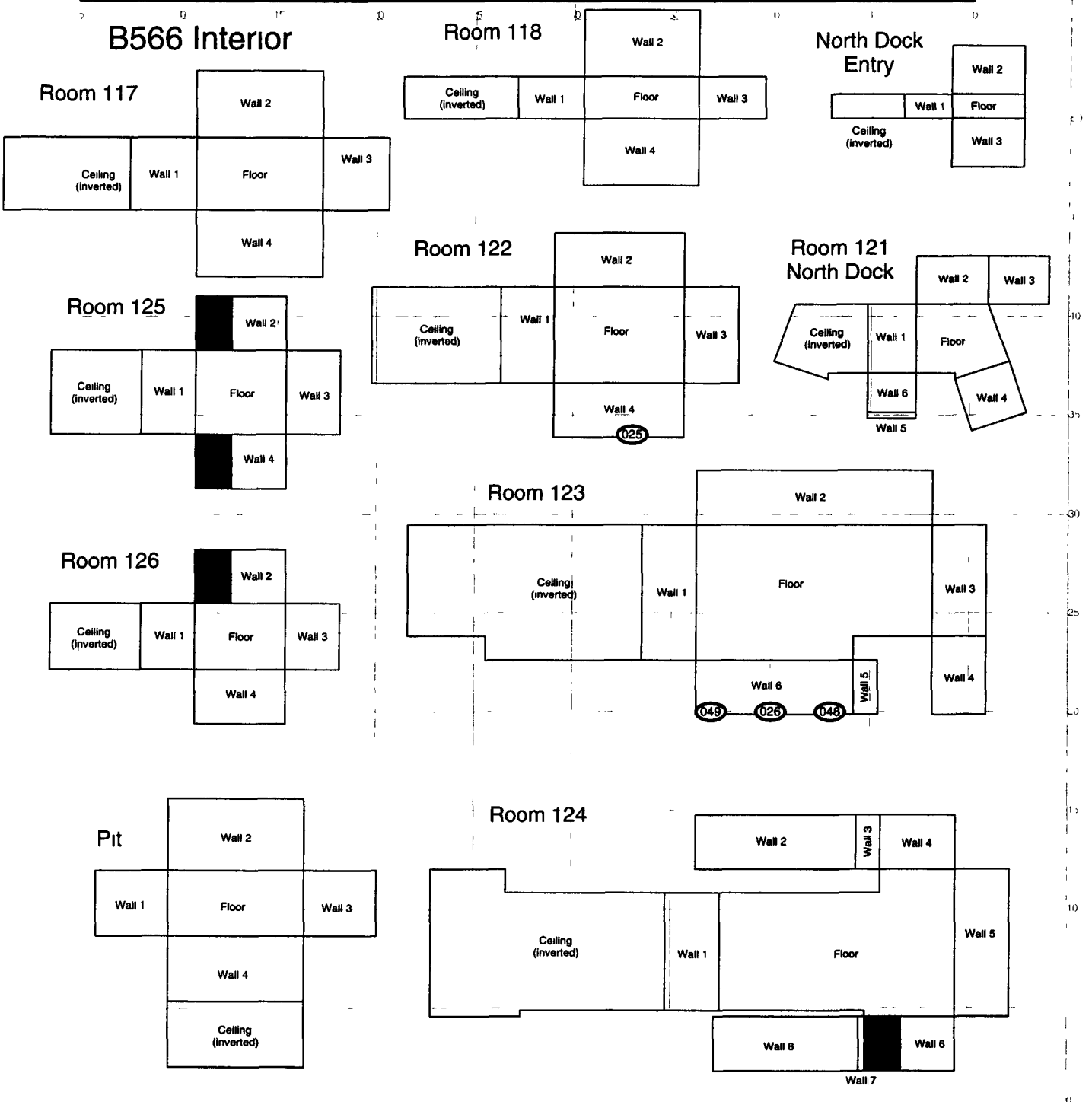
CHEMICAL SAMPLE MAP

Building 566 Interior & Exterior
Asbestos



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30

0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

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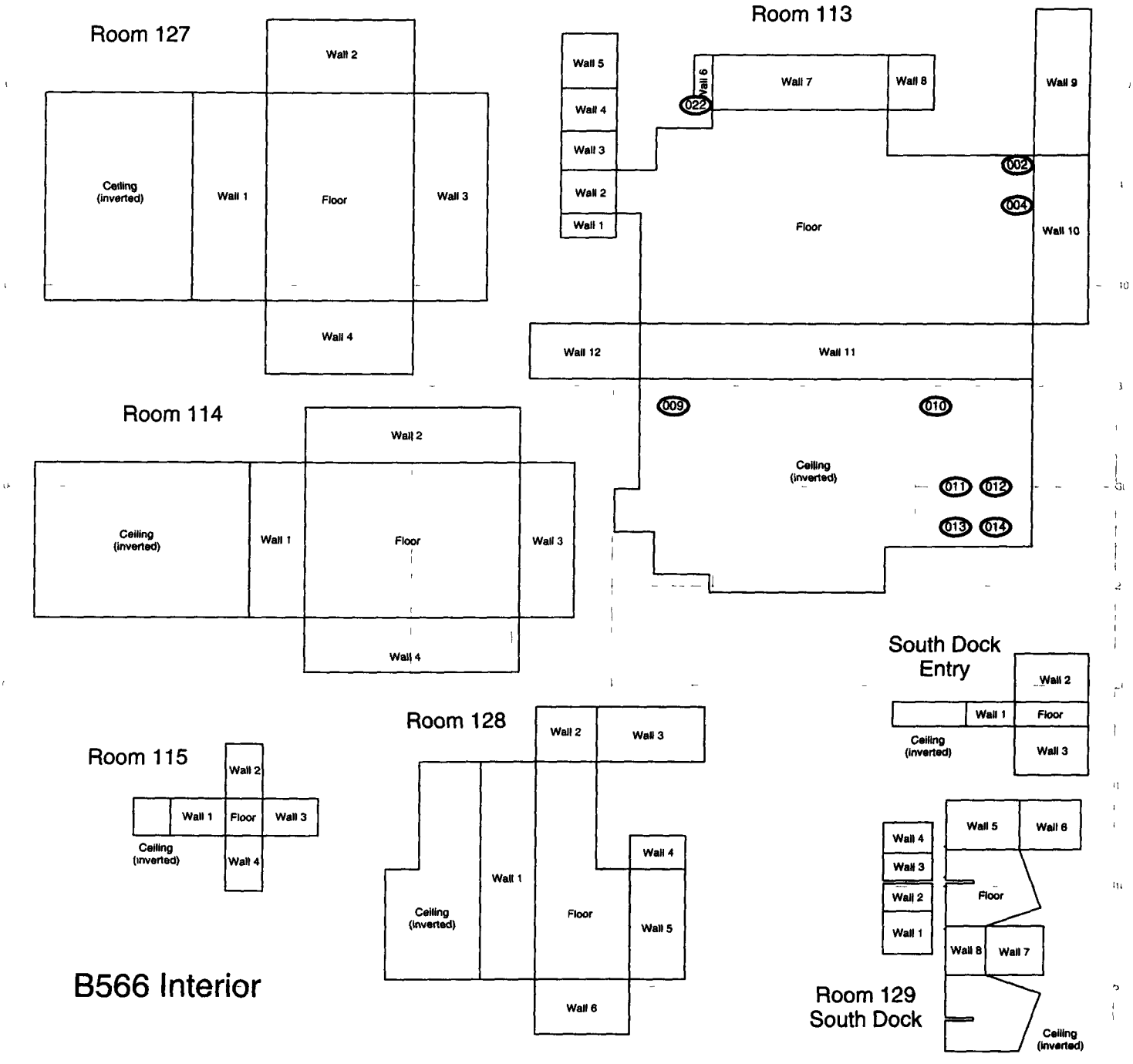
CHEMICAL SAMPLE MAP

Building 566 Interior & Exterior
Asbestos



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30

0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

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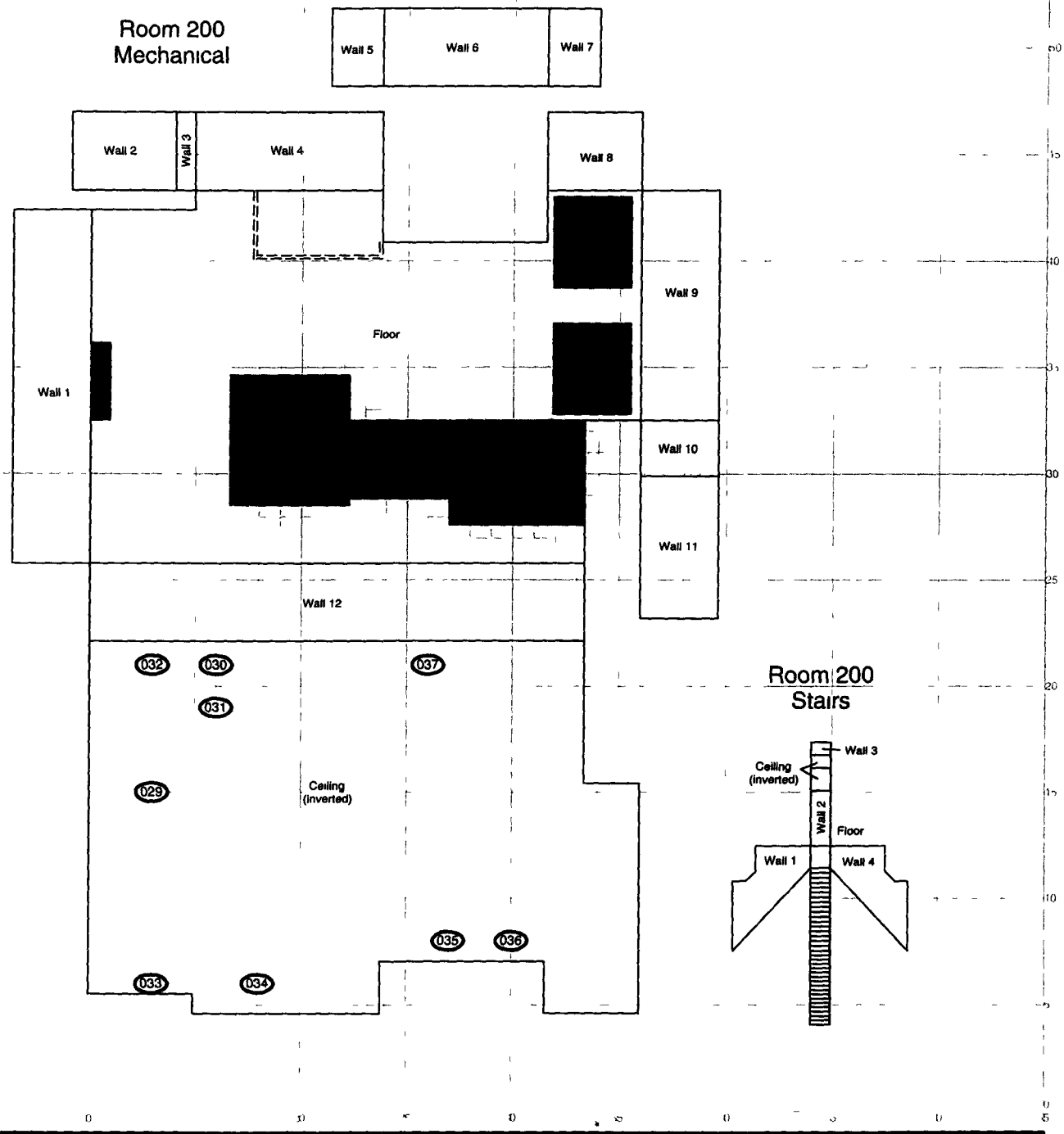
Nov 24, 2003

66

CHEMICAL SAMPLE MAP

Building 566 Interior & Exterior
Asbestos

B566 Second Floor Interior



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30

0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

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Prepared for

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Communications Group

MAP ID 03-0189/B566-IN5-ASB

Nov 24, 2003

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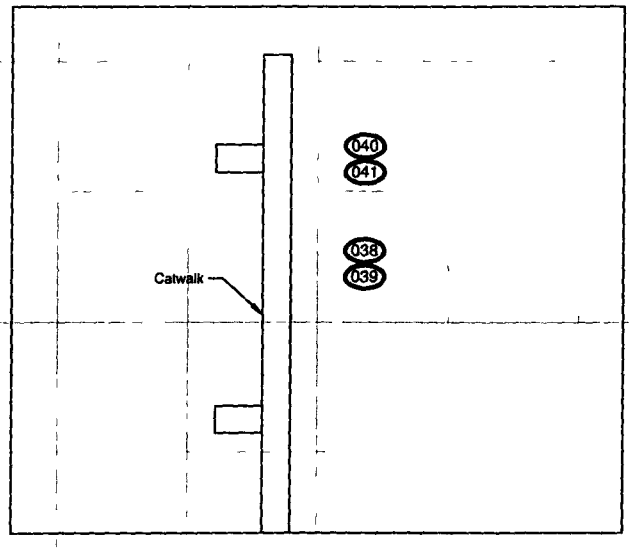
CHEMICAL SAMPLE MAP

Building 566 Interior & Exterior
Asbestos

B566 Second Floor Interior

North End
Above Ceiling Area



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30
0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

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Communications Group

Prepared for [redacted]

MAP ID 03-0189/B566-IN6-ASB Nov 24, 2003

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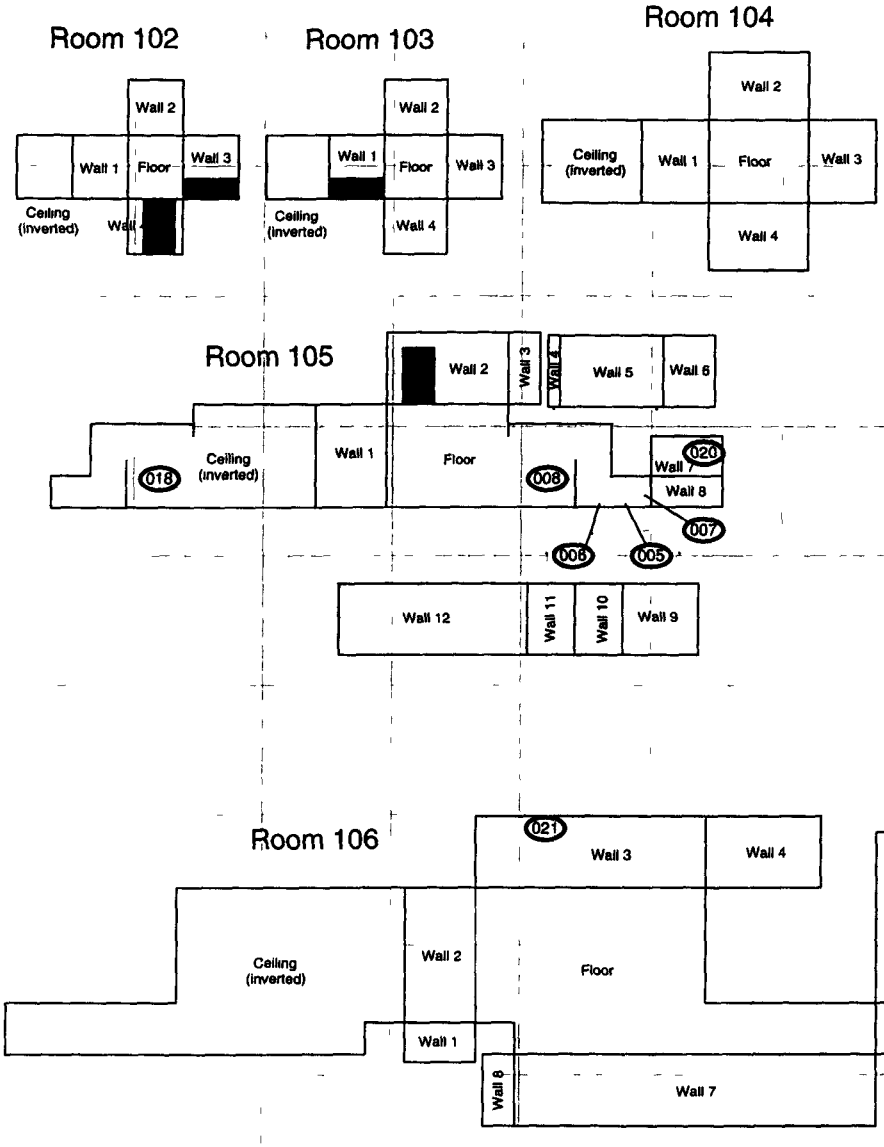
CHEMICAL SAMPLE MAP

Building 566A Interior
Asbestos

B566A Interior

Men's Locker



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30
0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

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Prepared by GIS Dept 303-966-7707 Prepared for:

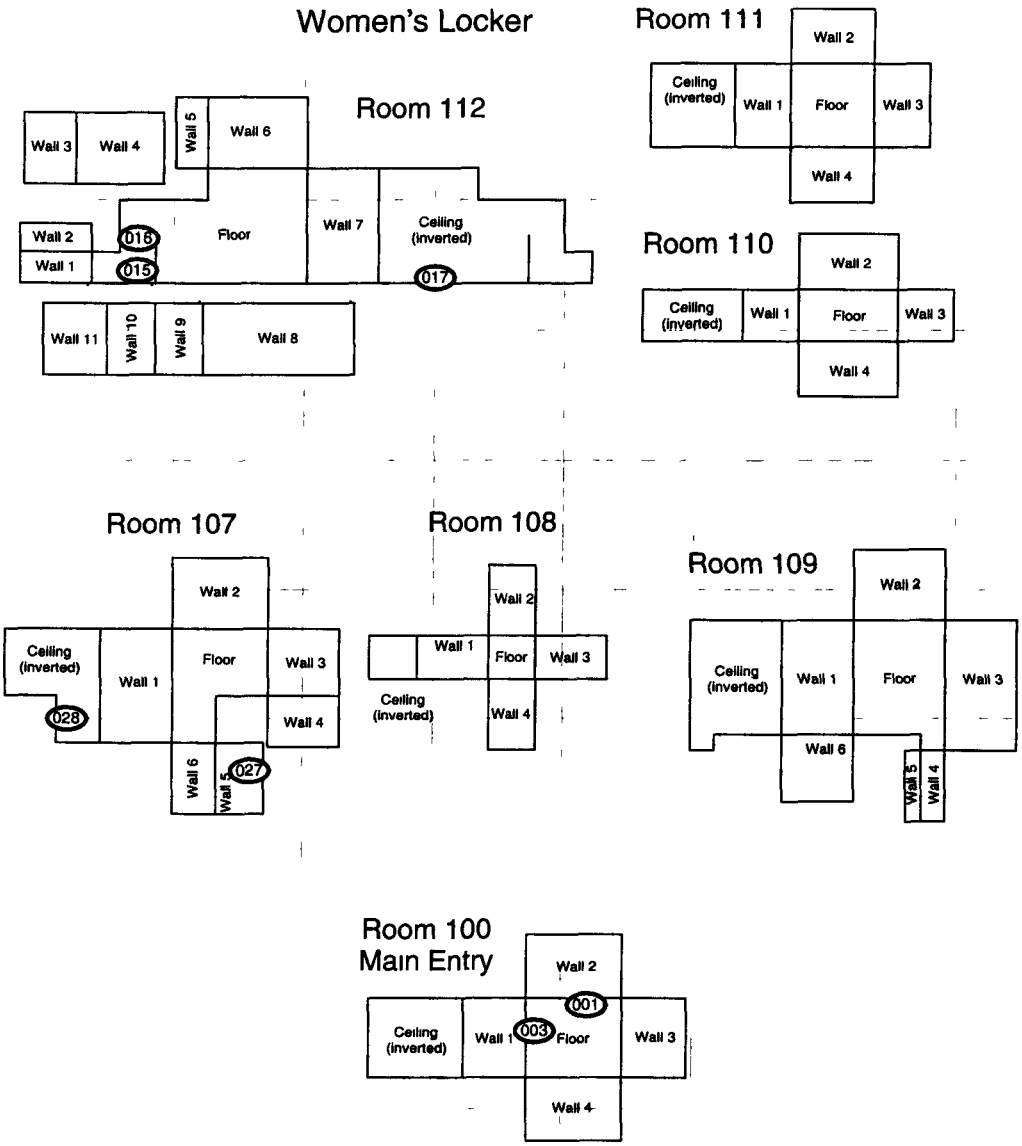
CH2MHILL Communications Group

MAP ID 03-0189/B566A-IN1-ASB Nov 25, 2003

CHEMICAL SAMPLE MAP

Building 566A Interior
Asbestos

B566A Interior



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30

0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

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Prepared for: [redacted]

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Communications Group

MAP ID 03-0189/B566A-IN2-ASB Nov 25, 2003

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Beryllium Data Summary

Sample Number	Map Point Location	Room	Sample Location	Result ($\mu g/100\ cm^2$)
Building 566A– RIN04Z0440/RIN04Z0431				
566-11172003-214-020	99	100	Floor, Biased Sample	< 0 1
566-11172003-214-021	100	105	Floor, Biased Sample	< 0 1
566-11172003-214-022	101	112	Floor, Biased Sample	< 0 1
566-11172003-214-096	102	106	Floor, Biased Sample	< 0 1
566-11172003-214-097	103	106	Floor, Biased Sample	< 0 1
Building 566– RIN03Z2236				
566-08262003-214-001	33	116 Mezzanine	Internal, Dry Lint Filter Cyclone, EPI From 120, NE Unit, Biased Sample	< 0 1
566-08262003-214-002	34	116 Mezzanine	Internal, Dry Lint Filter Cyclone Line, EPI From 120, NE Unit, Biased Sample	< 0 1
566-08262003-214-003	35	116 Mezzanine	Internal, Dry Lint Filter Cyclone Line, EPI From 120, Middle Unit, Biased Sample	< 0 1
566-08262003-214-004	36	116 Mezzanine	Internal, Dry Lint Filter Cyclone Line, EPI From 120, Middle Unit West, Biased Sample	< 0 1
566-08262003-214-005	37	116 Mezzanine	Internal, Dry Lint Filter Cyclone Line, EPI From 120, SE Unit, West Side, Biased Sample	< 0 1
566-08262003-214-006	38	116 Mezzanine	Internal, Dry Lint Filter Cyclone, EPI From 120, SE Unit East Side, Biased Sample	< 0 1
566-08262003-214-007	39	116 Mezzanine	Internal Dry Lint Filter Cyclone Line, EPI From 120, Middle Unit, East, Biased Sample	< 0 1
566-08262003-214-008	40	116	Collection Drum # 1 from Inside Duct, Biased Sample	< 0 1
566-08262003-214-009	41	116	Collection Drum # 2 from Inside Duct, Biased Sample	< 0 1
566-08262003-214-010	42	116	Collection Drum # 3 from Inside Duct, Biased Sample	< 0 1
566-08262003-214-011	Void	Void	Void	Void
566-Q8262003-214-012	43	116	EPI Ductwork, Mezzanine # 2, Biased Sample	< 0 1
566-08262003-214-013	44	116	EPI Ductwork, Mezzanine # 3, Biased Sample	< 0 1
566-08262003-214-014	45	116	EPI Ductwork, Mezzanine # 4, Biased Sample	< 0 1
566-08262003-214-015	46	116	EPI Ductwork, Mezzanine # 5, Biased Sample	< 0 1
566-08262003-214-016	47	116	EPI Ductwork, Mezzanine # 6, Biased Sample	< 0 1
566-08262003-214-017	48	116	Inside Lint Press, Auger, Biased Sample	< 0 1
566-08262003-214-018	49	116	Inside Lint Press, Invent/Screw Jack, Biased Sample	< 0 1
566-08262003-214-019	50	116	Outside of Lint Box, Biased Sample	< 0 1
Building 566– RIN04Z0431				
566-11172003-214-001	51	116	EPI Plenum, Pre Filter Base of Stairs, Biased Sample	< 0 1
566-11172003-214-002	52	116	EPI Plenum, Pre Filter Top of Stairs, Biased Sample	< 0 1
566-11172003-214-003	53	116	EPI Plenum, Pre Filter, Floor West Wall, Biased Sample	< 0 1
566-11172003-214-004	54	116	EPI Plenum, 1st Stage, 1st Floor, Biased Sample	< 0 1
566-11172003-214-005	55	116	EPI Plenum, 1st Stage, 1st Floor Filter Shelf, Biased Sample	< 0 1
566-11172003-214-006	56	116	EPI Plenum, 1st Stage, 2nd Floor Filter Shelf, Biased Sample	< 0 1
566-11172003-214-007	57	116	EPI Plenum, 2nd Stage, 1st Floor, Biased Sample	< 0 1
566-11172003-214-008	58	116	EPI Plenum, 2nd Stage, 1st Floor, Filter Shelf, Biased Sample	< 0 1

Beryllium Data Summary

Sample Number	Map Point Location	Room	Sample Location	Result ($ug/100\ cm^2$)
566-11172003-214-009	59	116	EPI Plenum, 2nd Stage, 2nd Floor, Filter Shelf, Biased Sample	< 0 1
566-11172003-214-010	60	116	EPI Plenum Final Stage, Floor, Biased Sample	< 0 1
566-11172003-214-011	61	116	EPI Plenum, Final Stage Floor, Biased Sample	< 0 1
566-11172003-214-012	62	200	Supply Plenum, Floor, Biased Sample	< 0 1
566-11172003-214-013	63	200	Supply Plenum, Floor, Biased Sample	< 0 1
566-11172003-214-014	10	113	Floor, Random Sample	< 0 1
566-11172003-214-015	27	113	Floor, Random Sample	< 0 1
566-11172003-214-016	20	113	Floor, Random Sample	< 0 1
566-11172003-214-017	18	127	Floor, Random Sample	< 0 1
566-11172003-214-018	13	127	Floor, Random Sample	< 0 1
566-11172003-214-019	31	127	Floor, Random Sample	< 0 1
566-11172003-214-023	26	128	Floor, Random Sample	< 0 1
566-11172003-214-024	6	126	Floor, Random Sample	< 0 1
566-11172003-214-025	19	113	Ceiling, Random Sample	< 0 1
566-11172003-214-026	11	113	Floor, Random Sample	< 0 1
566-11172003-214-027	22	113	Floor, Random Sample	< 0 1
566-11172003-214-028	30	129	Floor, Random Sample	< 0 1
566-11172003-214-029	24	123	Floor, Random Sample	< 0 1
566-11172003-214-030	2	123	Floor, Random Sample	< 0 1
566-11172003-214-031	4	124	Floor, Random Sample	< 0 1
566-11172003-214-032	12	122	Floor, Random Sample	< 0 1
566-11172003-214-033	1	118	Floor, Random Sample	< 0 1
566-11172003-214-034	9	114	Floor, Random Sample	< 0 1
566-11172003-214-035	15	114	Top of Shelve, Random Sample	< 0 1
566-11172003-214-036	7	114	Top of Shelve, Random Sample	< 0 1
566-11172003-214-037	16	120	Floor, Random Sample	< 0 1
566-11172003-214-038	5	120	Floor, Random Sample	< 0 1
566-11172003-214-039	25	120	Floor, Random Sample	< 0 1
566-11172003-214-040	23	125	Floor, Random Sample	< 0 1
566-11172003-214-041	64	123	Hood West Wall, Inside Lower Duct, Biased Sample	< 0 1
566-11172003-214-042	65	123	Hood West Wall Grating, Biased Sample	< 0 1
566-11172003-214-043	66	123	Hood South Wall, West Side, Inside Lower Duct, Biased Sample	< 0 1
566-11172003-214-044	67	123	Hood South Wall, West Side, Grating, Biased Sample	< 0 1
566-11172003-214-045	68	123	Hood South Wall East Side, Inside Lower Duct, Biased Sample	< 0 1
566-11172003-214-046	69	123	Hood South Wall, East Side , Grating, Biased Sample	< 0 1
566-11172003-214-047	70	123	Hood West Wall, Inside Drain, Biased Sample	< 0 1
566-11172003-214-048	71	123	Hood South Wall, West Side, Inside Drain, Biased Sample	< 0 1
566-11172003-214-049	72	123	Hood South Wall, East Side, Inside Drain, Biased Sample	< 0 1
566-11172003-214-050	73	123	Hood West Wall, Inside Duct Port, Biased Sample	< 0 1

Beryllium Data Summary				
Sample Number	Map Point Location	Room	Sample Location	Result ($ug/100\ cm^2$)
566-11172003-214-051	74	123	Hood South Wall, West Side, Inside Duct Port, Biased Sample	< 0 1
566-11172003-214-052	75	123	Hood, South Wall, East End, Inside Duct Port, Biased Sample	< 0 1
566-11172003-214-053	76	123	Respirator Dryer, Inside Duct Port, Biased Sample	< 0 1
566-11172003-214-054	3	200	Floor, Random Sample	< 0 1
566-11172003-214-055	8	200	Floor, Random Sample	< 0 1
566-11172003-214-056	17	200	Floor Stairwell to Room 200, Random Sample	< 0 1
566-11172003-214-057	77	200	Inside Process Waste Line, Biased Sample	< 0 1
566-11172003-214-058	29	116 Mezzanine	Top of Air Plenum, Random Sample	< 0 1
566-11172003-214-059	32	116	Floor, Random Sample	< 0 1
566-11172003-214-060	21	116	Floor, Random Sample	< 0 1
566-11172003-214-061	28	116	Floor, Random Sample	< 0 1
566-11172003-214-062	14	127	Inside Pit, Random Sample	< 0 1
566-11172003-214-063	78	116	EP2 Floor, 3rd Stage, Biased Sample	< 0 1
566-11172003-214-064	79	116	EP2 Floor, 2nd Stage, Biased Sample	< 0 1
566-11172003-214-065	80	116	EP2 Filter Shelf, 2nd Stage, Biased Sample	< 0 1
566-11172003-214-066	81	116	EP2 Floor, 1st Stage, Biased Sample	< 0 1
566-11172003-214-067	82	116	EP2 Filter Shelf, 1st Stage, Biased Sample	< 0 1
566-11172003-214-068	83	116	EP2 Floor, Pre-Filter, Biased Sample	< 0 1
566-11172003-214-069	84	116	EP2, Filter Shelf, Pre-Filter, Biased Sample	< 0 1
566-11172003-214-070	85	120	Floor of Trench, Biased Sample	< 0 1
566-11172003-214-071	86	120	Floor of Trench, Biased Sample	< 0 1
566-11172003-214-072	87	120	Floor of Trench, Biased Sample	< 0 1
566-11172003-214-073	88	123	Inside duct to Stalag 13 on West Wall, Biased Sample	< 0 1
566-11172003-214-074	NA	NA	Blank	< 0 1
566-11172003-214-075	NA	NA	Blank	< 0 1
566-11172003-214-076	NA	NA	Blank	< 0 1
566-11172003-214-077	NA	NA	Blank	< 0 1
566-11172003-214-078	NA	NA	Blank	< 0 1
566-11172003-214-079	NA	NA	Blank	< 0 1
566-11172003-214-080	NA	NA	Blank	< 0 1
Building 566 - RIN04Z0440				
566-11172003-214-086	89	116 Mezzanine	Top of SFI, West End, Biased Sample	< 0 1
566-11172003-214-087	90	116 Mezzanine	Top of SFI, East End, Biased Sample	< 0 1
566-11172003-214-088	91	116 Mezzanine	Top of EPI 120 , Center, Biased Sample	< 0 1
566-11172003-214-089	92	116 Mezzanine	Top of EPI Air Plenum, North End, Biased Sample	< 0 1
566-11172003-214-090	93	116 Mezzanine	Top of EPI Air Plenum, South End, Biased Sample	< 0 1
566-11172003-214-091	94	200	Top of SFI, West End, Biased Sample	< 0 1
566-11172003-214-092	95	200	Top of SFI, East End, Biased Sample	< 0 1
566-11172003-214-093	96	200	Top of Evaporative Cooler 331-884, Biased Sample	< 0 1

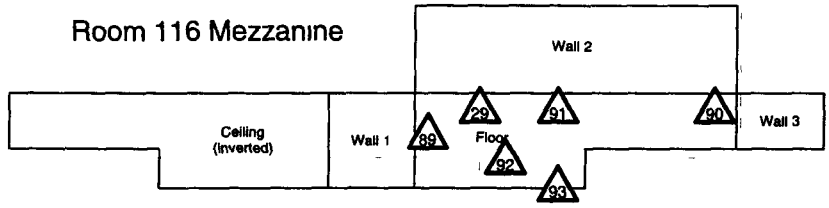
Beryllium Data Summary				
Sample Number	Map Point Location	Room	Sample Location	Result ($\mu g/100\ cm^2$)
566-11172003-214-094*	97	200 Catwalk	Top of Duct, Biased Sample	< 0 1
566-11172003-214-095	98	200 Catwalk	Top of Ceiling Tile, Biased Sample	< 0 1
566-11172003-214-098	NA	NA	Blank	< 0 1
566-11172003-214-099	NA	NA	Blank	< 0 1
566-11172003-214-100	NA	NA	Blank	< 0 1

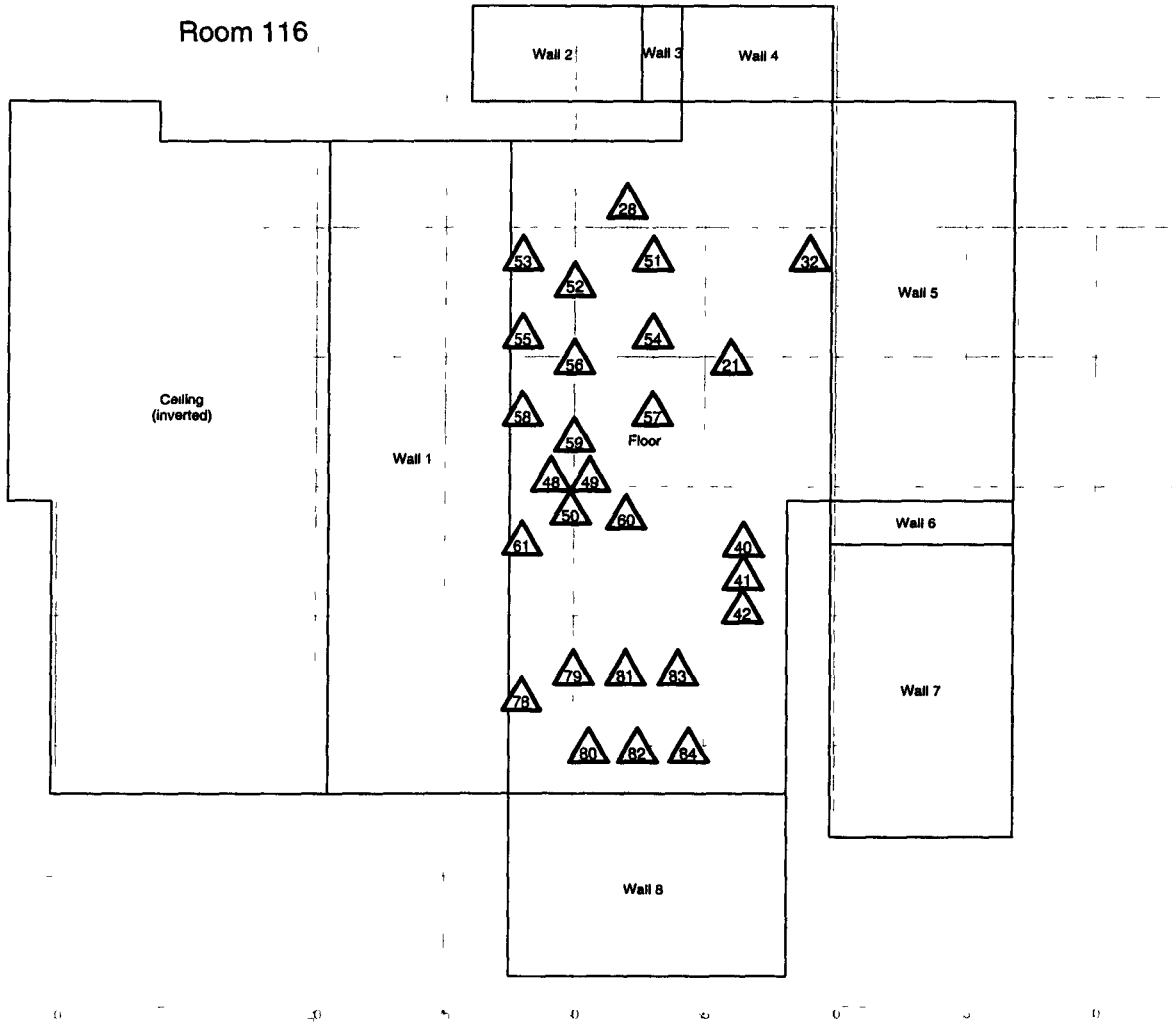
*Chain of Custody inadvertently omitted sample number 566-11172003-214-094 during numbering However, sample was numbered, taken and controlled in accordance with the requirements of chain of custody thus maintaining sample integrity On this basis, the sample results are considered acceptable The analytical results for this sample identify the sample by the designated sample number

CHEMICAL SAMPLE MAP

Building 566 Room 116
Beryllium

B566 Interior





SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30
0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

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Communications Group

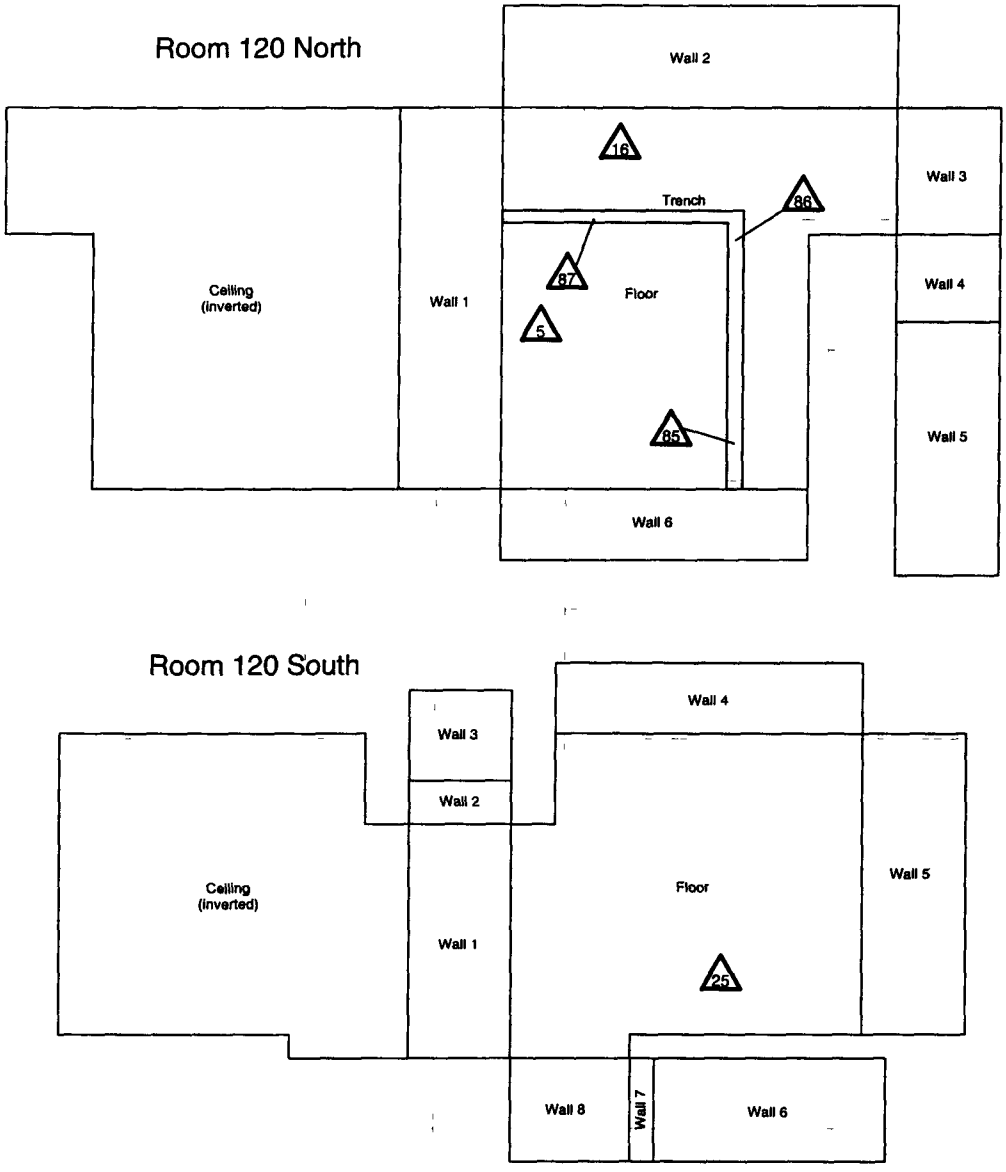
MAP ID 03-0189/B566-IN1-BE

Sept 29, 2003

CHEMICAL SAMPLE MAP

Building 566 Room 120
Beryllium

B566 Interior



SURVEY MAP LEGEND

- (#) Asbestos Sample Location
- Beryllium Sample Location
- [#] Lead Sample Location
- RCRA/CERCLA Sample Location
- (#) PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30

0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

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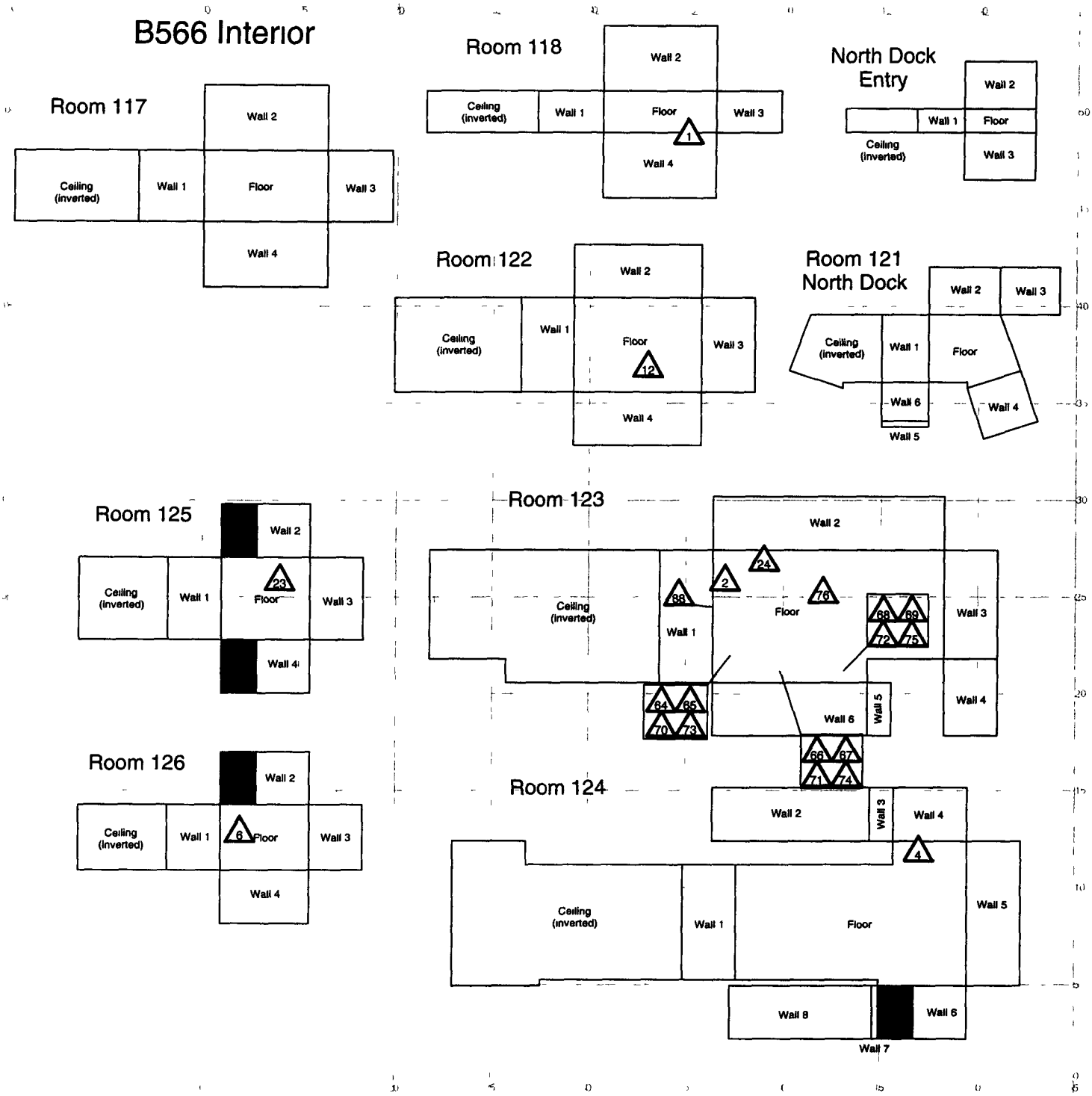
Sept 29, 2003

CHEMICAL SAMPLE MAP

Building 566
Beryllium



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30

0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

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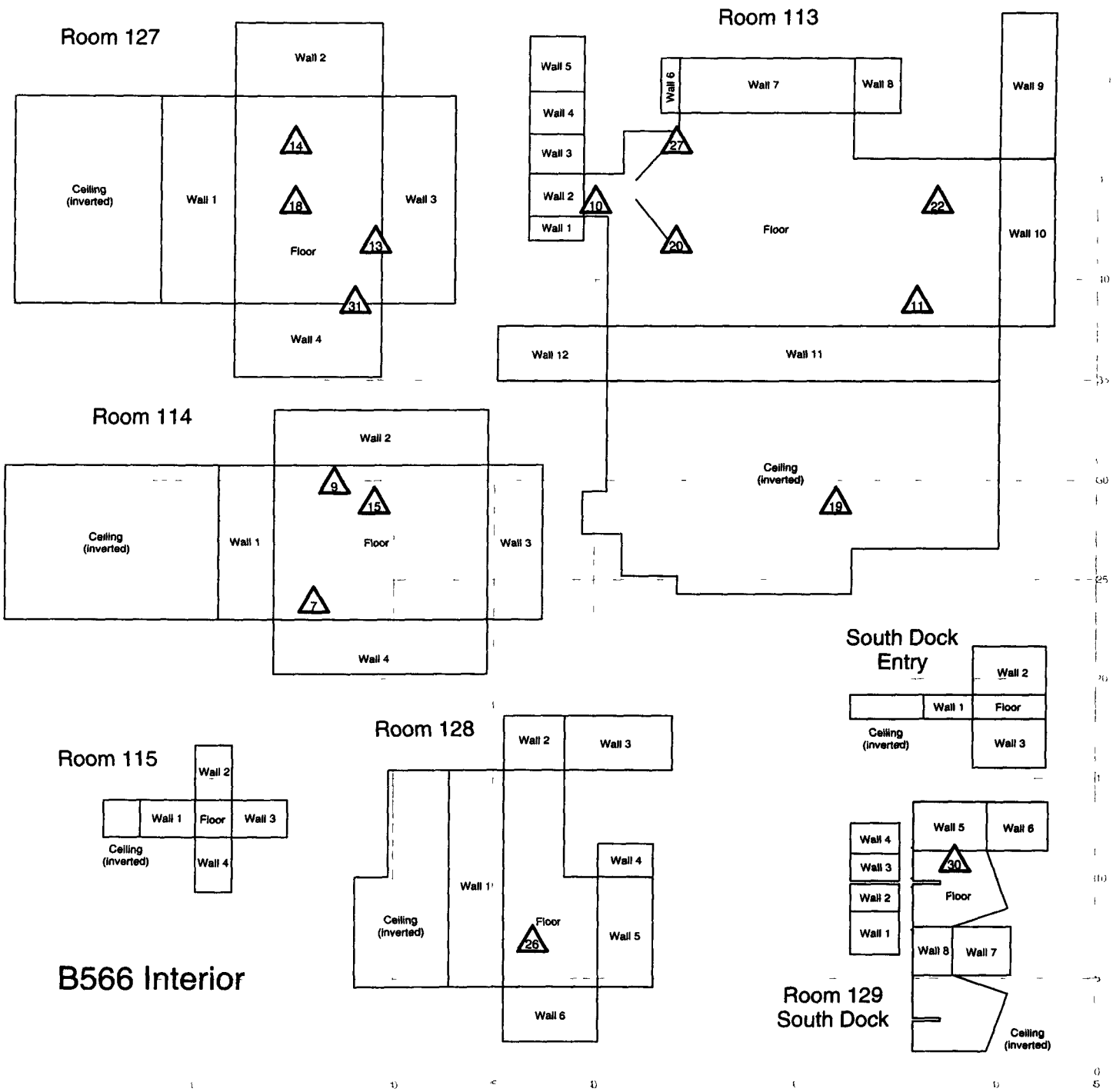
Sept 29, 2003

CHEMICAL SAMPLE MAP

Building 566
Beryllium



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30

0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

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MAP ID 03-0189/B566-IN4-SC Sept 29, 2003

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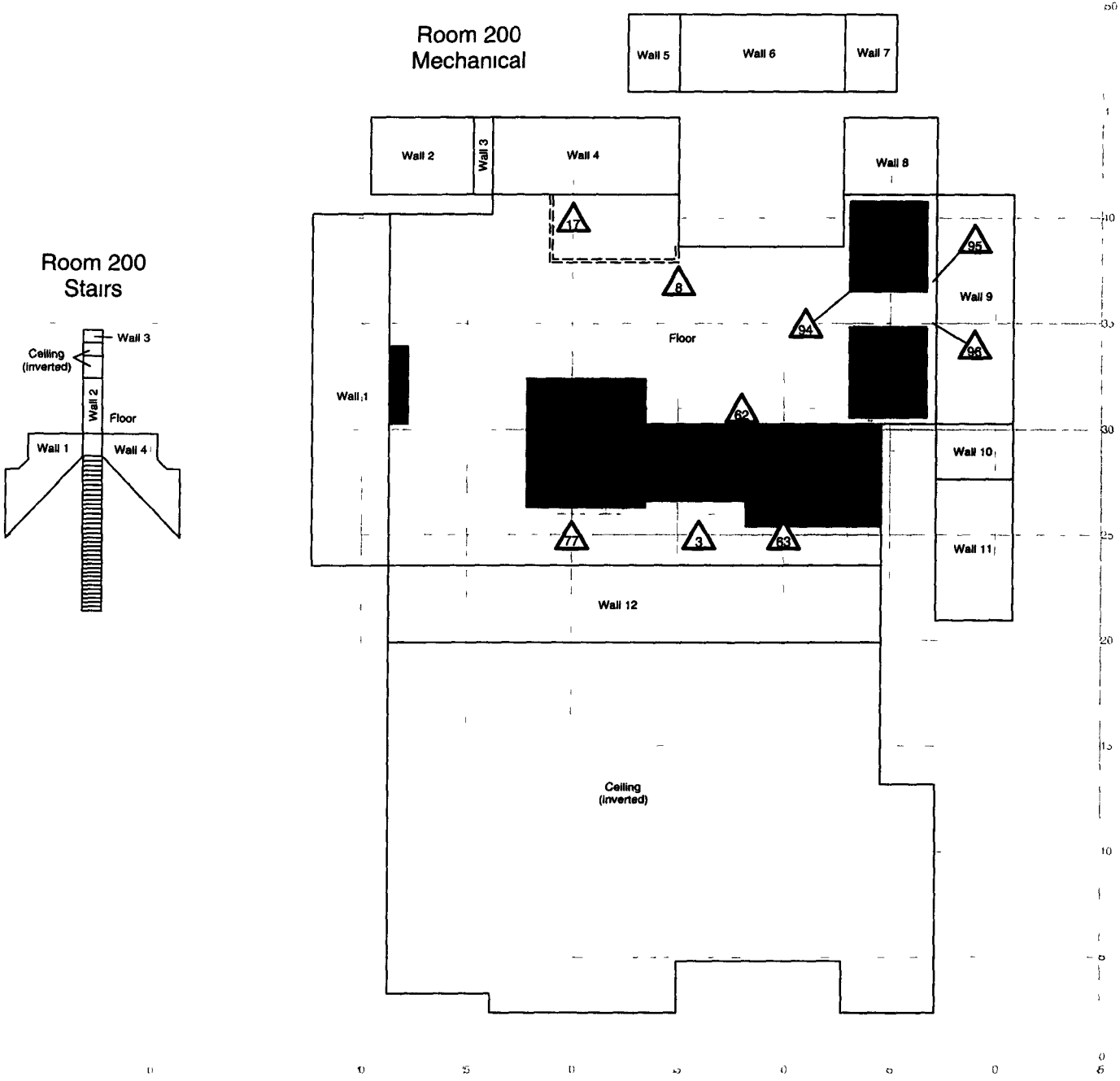
CHEMICAL SAMPLE MAP

Building 566 Room 200 Mechanical
Beryllium

B566 Second Floor Interior



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30

0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

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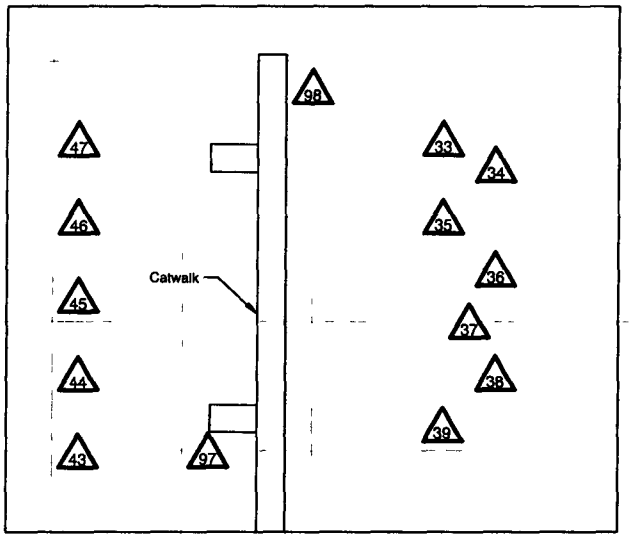
Sept 29, 2003

CHEMICAL SAMPLE MAP

Building 566
Beryllium

B566 Second Floor Interior

North End
Above Ceiling Area



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30

0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

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MAP ID 03-0189/B566-IN6-BE

Nov 26, 2003

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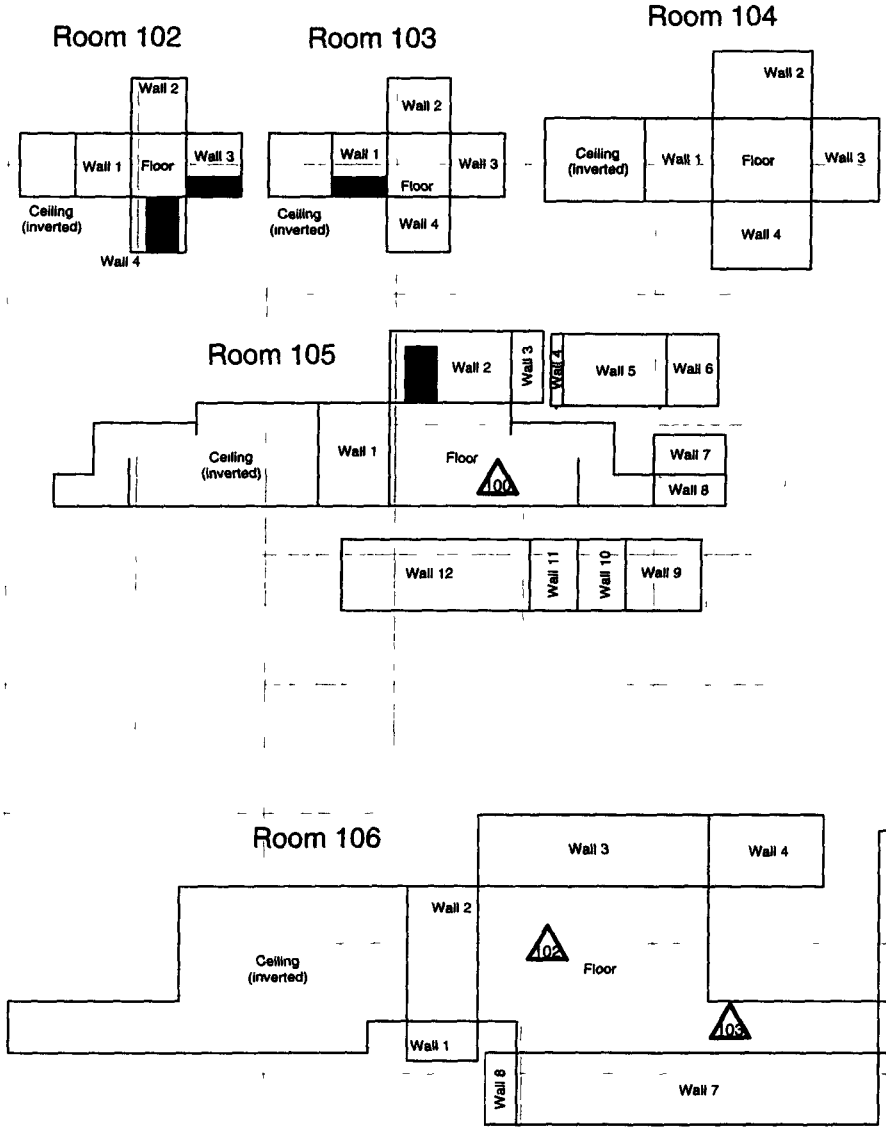
CHEMICAL SAMPLE MAP

Building 556A
Beryllium

B566A Interior

Men's Locker



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30

0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

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Prepared for: [redacted]

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MAP ID 03-0189/B566A-IN1-BE

Sept 30, 2003

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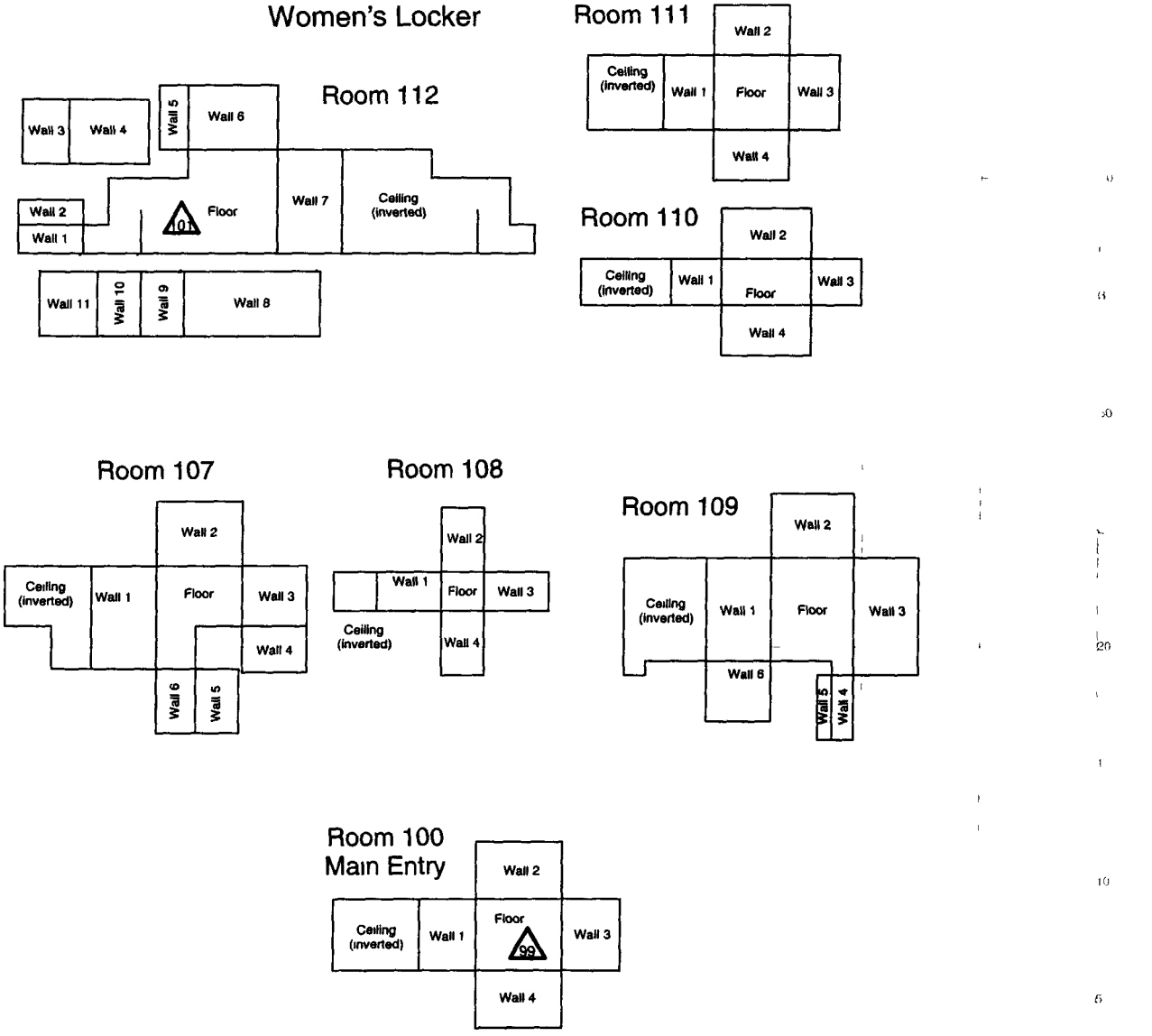
CHEMICAL SAMPLE MAP

Building 566A
Beryllium

B566A Interior



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 30
0 METERS 10

1 inch = 24 feet 1 grid sq = 1 sq m

U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by GIS Dept 303-966-7707

Prepared for [redacted]

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MAP ID 03-0189/B566A-IN2-BE

Sept 30, 2003

ATTACHMENT E

Data Quality Assessment (DQA) Detail

DATA QUALITY ASSESSMENT (DQA)

VERIFICATION & VALIDATION OF RESULTS

V&V of the data confirm that appropriate quality controls are implemented throughout the sampling and analysis process, and that any substandard controls result in qualification or rejection of the data in question The required quality controls and their implementation are summarized in a tabular, checklist format for each category of data – radiological surveys and chemical analyses (specifically asbestos and beryllium)

DQA criteria and results are provided in a tabular format for each suite of surveys or chemical analyses performed, the radiological survey assessment is provided in Table E-1, asbestos in E-2, and beryllium in E-3 A data completeness summary for all results is given in Table E-4

All relevant Quality records supporting this report are maintained in the RISS Characterization Project Files This report will be submitted to the CERCLA Administrative Record for permanent storage within 30 days of approval by the Regulators All radiological data are organized into Survey Packages, which correlate to unique (MARSSIM) Survey Units Chemical data are organized by RIN (Report Identification Number) and are traceable to the sample number and corresponding sample location

Beta/gamma survey designs were not implemented for Buildings 566 and 566A based on the conservatism of the transuranic limits used as DCGLs in the unrestricted release decision process Survey designs were implemented based on the transuranic limits used as DCGLs in the unrestricted release decision process All survey results were evaluated against, and were less than the Transuranic $DCGL_w$ (100 dpm/100cm^2) and the Uranium $DCGL_w$ (5,000 dpm/100cm^2) unrestricted release limits, except for the two concrete trenches, the two process waste tanks, and the one vertical leg of process waste piping as discussed in Section 3 0

Consistent with EPA's G-4 DQO process, the radiological survey design (for those survey units performed per PDS requirements) was optimized by checking actual measurement results (acquired during pre-demolition surveys) against model output with original estimates Use of actual sample/survey (result) variances in the MARSSIM DQO model confirms that an adequate number of surveys were acquired

SUMMARY

In summary, the data presented in this report have been verified and validated relative to the quality requirements and project decisions as stated in the original DQOs All data are useable based on qualifications stated herein and are considered satisfactory without qualification All media surveyed and sampled yielded results less than their associated action levels and with acceptable uncertainties, except for the following anomalous conditions

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- Initial net activity identified in survey unit 566-4-001 at locations 31 and 32 (159 5 dpm/100cm^2 and 198 6 dpm/100cm^2) greater than the DCGL (100 0 dpm/100cm^2) The locations were sealed, allowed to decay, and resurveyed Both re-survey results were less than the DCGL and are the values reported in the TSA Data Summary No further investigation required
- No RSA surveys taken at locations 31 and 32 as this was an investigation, therefore, Data Completeness Summary Table E-4 reflects 32 TSA and 30 RSA surveys taken
- Chain of Custody inadvertently omitted Beryllium sample number 566-11172003-214-094 during numbering for Building 566 interior However, sample was numbered as designated when taken, and sample integrity was controlled and maintained in accordance with the chain of custody requirements The analytical results for this sample are identified in RIN04Z0440 as 566-11172003-214-094 and results are considered acceptable
- The two contaminated concrete slab trenches, two (2) process waste tanks, and one leg of vertical process waste piping that remain in Building 566 will be managed and disposed of as low level waste during demolition activities

Based upon an independent review of the radiological data, it is determined that the original project DQOs satisfied MARSSIM guidance All facility contamination levels were below applicable unrestricted release levels, except as noted above Minimum survey requirements were met, sampling/survey protocol was performed in accordance with applicable procedures, survey units were properly designed and bounded, and instrument performance and calibration were within acceptable limits

Chain of Custody was intact, documentation was complete, hold times were acceptable (where applicable,) and packaging integrity/custody seals were maintained throughout the sampling/analysis process Level 2 Isolation Controls have been posted to prevent the inadvertent introduction of further contamination into the facility On this basis, Buildings 566 and 566A meet the RLCP and PDSP DQO criteria with the confidences stated herein

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Table E-1 V&V of Radiological Surveys - Buildings 566 and 566A

V&V CRITERIA, RADIOLGICAL SURVEYS	K-H RSP 16 00 Series MARSSIM (NUREG-1575)		
QUALITY REQUIREMENTS			
Parameters	**Measure**	**Frequency**	**COMMENTS**
ACCURACY initial calibrations	90%<x<110%	≥1	Multi-point calibration through the measurement range encountered in the field, programmatic records
daily source checks	80%<x<120%	≥1/day	Performed daily/within range
local area background Field	typically < 10 dpm	≥1/day	All local area backgrounds were within expected ranges (i e , no elevated anomalies)
PRECISION field duplicate measurements for TSA	≥5% of real survey points	≥10% of reals	N/A
REPRESENTATIVENESS MARSSIM methodology Survey Units 566-4-001, 566A-4-002 and 566-4-003 (interior and exterior)	statistical and biased	NA	Random w/ statistical confidence
Survey Maps	NA	NA	Random and biased measurement locations controlled/mapped to ±1m
Controlling Documents (Characterization Pkg, RSPs)	qualitative	NA	Refer to the Characterization Package (planning document) for field/sampling procedures (located in Project files), thorough documentation of the planning, sampling/analysis process, and data reduction into formats
COMPARABILITY units of measure	dpm/100cm^2	NA	Use of standardized engineering units in the reporting of measurement results
COMPLETENESS Plan vs Actual surveys usable results vs unusable	>95% >95%	NA	See Table E-4 for details
SENSITIVITY detection limits	TSA ≤50 dpm/100cm^2 RA ≤10 dpm/100cm^2	all measures	MDAs ≤ ½ DCGL$_w$ per MARSSIM guidelines

Table E-2 V&V of Asbestos Results - Buildings 566 and 566A

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE		
ASBESTOS	METHOD EPA 600/R-93/116	LAB ---->	Reservoirs Environmental, Inc	
QUALITY REQUIREMENT		RIN ---->	RIN03Z2218	
		Measure	Frequency	COMMENTS
ACCURACY	Calibrations Initial/continuing	below detectable amounts	≥1	Semi-quantitative, per (microscopic) visual estimation
PRECISION	Actual Number Sampled LCSD Lab duplicates	all below detectable amounts	≥ 49 samples	Semi-quantitative, per (microscopic) visual estimation
REPRESENTATIVENESS	COC	Qualitative	NA	Chain-of-Custody intact completed paperwork, containers w/ custody seals
	Hold times/preservation	Qualitative	NA	N/A
	Controlling Documents (Plans, Procedures, maps, etc)	Qualitative	NA	See original Chemical Characterization Plan (planning document), for field/sampling procedures (located in project file,) thorough documentation of the planning, sampling/analysis process, and data reduction into formats
COMPARABILITY	Measurement Units	% by bulk volume	NA	Use of standardized engineering units in the reporting of measurement results
COMPLETENESS	Plan vs Actual samples Usable results vs unusable	Qualitative	NA	See Table E-4 final number of samples at Certified Inspector's discretion
SENSITIVITY	Detection limits	<1% by volume	all measures	N/A

Table E-3 V&V of Beryllium Results - Buildings 566 and 566A

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE		[redacted]
BERYLLIUM	Prep NMAM 7300 METHOD OSHA ID-125G	LAB ---->	Johns Manville Corp Denver, Co	
QUALITY REQUIREMENTS		RIN ---->	RIN04Z0431 RIN04Z0440 RIN03Z2236	
		Measure	Frequency	COMMENTS
ACCURACY	Calibrations Initial	linear calibration	≥1	No qualifications significant enough to change project decisions, i e , classification of Type 2 facilities confirmed All results were below associated action levels
	Continuing	80%<%R<120%	≥1	
	LCS/MS	80%<%R<120%	≥1	
	Blanks - lab & field	<MDL	≥1	
	interference check std (ICP)	NA	NA	
PRECISION	LCSD	80%<%R<120% (RPD<20%)	≥1	
	field duplicate	all results < RL	≥1	
REPRESENTATIVENESS	COC	Qualitative	NA	
	hold times/preservation	Qualitative	NA	
	Controlling Documents (Plans, Procedures, maps, etc)	Qualitative	NA	
COMPARABILITY	measurement units	ug/100cm^2	NA	
COMPLETENESS	Plan vs Actual samples usable results vs unusable	>95% >95%	NA	
SENSITIVITY	detection limits	MDL of 0 012 ug/100cm^2	all measures	

Table E-4 Data Completeness Summary - Buildings 566 and 566A

ANALYTE	Building/Area /Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Asbestos	Building 566 (interior and exterior)	12 biased	35 biased	No ACM present, all results < 1% by volume	40 CFR763 86, 5 CCR 1001-10, EPA 600/R-93/116 RIN03Z2218
Asbestos	Building 566A (interior and exterior)	6 biased	14 biased	No ACM present, all results < 1% by volume	40 CFR763 86, 5 CCR 1001-10, EPA 600/R-93/116 RIN03Z2218
Beryllium	Building 566 (interior)	10 biased (interior)	99 samples (32 random/67 biased)	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN003Z2236 (sample numbers 566-08262003-214-001 thru 566-08262003-214-019) RIN04Z0431 (sample numbers 566-11172003-214-001 thru 566-11172003-214-019 and 566-11172003-214-023 thru 566-11172003-214-080) RIN04Z0440 (sample numbers 566-11172003-214-086 thru 566-11172003-214-095 and 566-11172003-214-098 thru 566-11172003-214-100) No results above action level (0 2ug/100cm^2) or investigative level (0 1 ug/100cm^2)

Table E-4 Data Completeness Summary - Buildings 566 and 566A

ANALYTE	Building/Area /Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc)
Beryllium	Building 566A (interior)	10 biased (interior)	14 biased	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN04Z0440 (sample numbers 566-11172003-214-086 and 566-11172003-214-097) RIN04Z0431 (sample numbers 566-11172003-214-020 thru 566-11172003-214-021) No results above action level (0 2ug/100cm^2) or investigative level (0 1 ug/100cm^2)
Radiological	Survey Area 4 Survey Unit 566-4-001 Building 566 (exterior)	30 α TSA (22 random/8 biased) and 30 α Smears (22 random/8 biased) 2 QC TSA 10% scan	32 α TSA (22 random/10 biased) and 30 α Smears (22 random/8 biased) 2 QC TSA 10% scan	No elevated contamination at any location, all values below PDS unrestricted release levels	Transuranic and/or Uranium DCGLs as applicable Initial net activity at location 31 and 32 (159 5 dpm/100cm^2 and 198 6 dpm/100cm^2) greater than the DCGL The locations were sealed, allowed to decay, and resurveyed Both re-survey results were less than the DCGL and are the values reported in the TSA Data Summary No further investigation required No RSA surveys taken at locations 31 and 32 as this was an investigation, therefore, Table E-4 reflects 32 TSA and 30 RSA surveys taken

Table E-4 Data Completeness Summary - Buildings 566 and 566A

ANALYTE	Building/Area /Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Survey Area 4 Survey Unit 566A-4-002 Building 566A (interior and exterior)	20 α TSA (15 random/5 biased) and 20 α Smears (15 random/5 biased) 30 α TSA and 30 α Smears (equipment) 3 QC TSA 25% scan of interior floor and 10% scan of remaining interior and exterior surfaces	22 α TSA (15 random/7 biased) and 22 α Smears (15 random/7 biased) 30 α TSA and 30 α Smears (equipment) 3 QC TSA 25% scan of interior floor and 10% scan of remaining interior and exterior surfaces	No elevated contamination at any location, all values below PDS unrestricted release levels	Transuranic and/or Uranium DCGLs as applicable
Radiological	Survey Area 4 Survey Unit 566-4-003 Building 566 (interior)	37 α TSA (27 systematic/10 biased) 37 α Smears (27 systematic/10 biased) 30 α TSA and 30 α Smears (equipment) 4 QC TSA 50% scan interior floor and equipment and 10% of interior walls and ceiling	38 α TSA (28 systematic/10 biased) 38 α Smears (28 systematic/10 biased) 40 α TSA and 30 α Smears (equipment) 4 QC TSA 50% scan interior floor and equipment and 10% of interior walls and ceiling	Two concrete slab trenches, two process waste tanks, and one leg of vertical process waste piping will be managed as LLW All other values below PDS unrestricted release levels	Transuranic and/or Uranium DCGLs as applicable

ATTACHMENT C

Building 566 Trench Survey